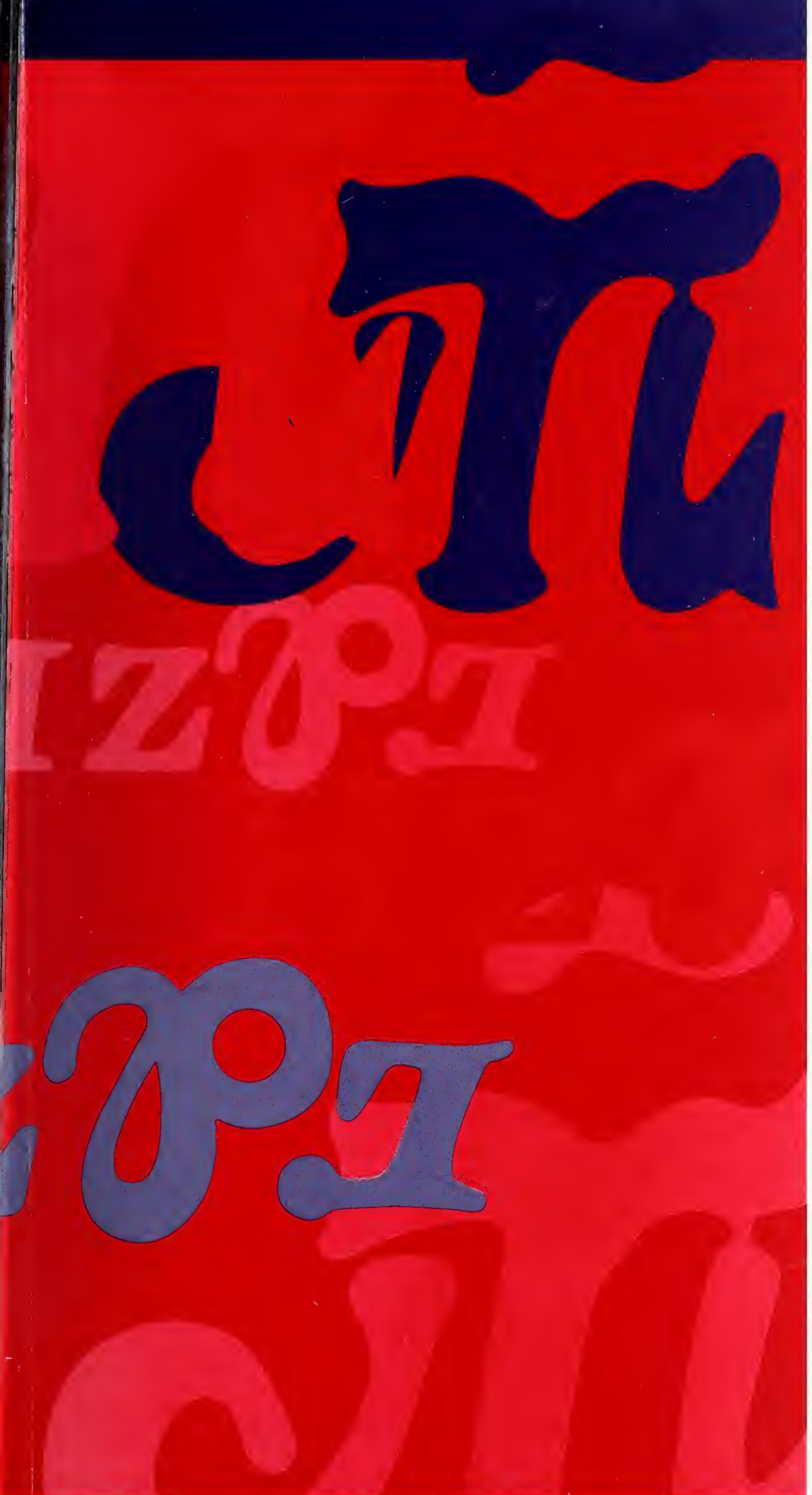


Minority Programs

of the National Heart, Lung, and Blood Institute

Fiscal Year 1997

NATIONAL INSTITUTES OF HEALTH
NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

The letterforms (from top left) illustrated on the cover of this report, as well as on the divider pages, are drawn from the Swahili and Cherokee languages. The Swahili characters stand for the letter M, and the Cherokee characters translate to the word "minority."

Minority Programs

of the National Heart, Lung, and Blood Institute

Fiscal Year 1997

U.S. Department of Health and Human Services
Public Health Service
National Institutes of Health
National Heart, Lung, and Blood Institute

For Administrative Use
August 1998

Minority Programs of the National Heart, Lung, and Blood Institute

Fiscal Year 1997

The National Heart, Lung, and Blood Institute (NHLBI) provides leadership for a national program in diseases of the heart, blood vessels, lungs, and blood; sleep disorders; and blood resources. The Institute plans, conducts, fosters, and supports an integrated and coordinated program of basic research, clinical investigations and trials, observational studies, and demonstration and education projects related to the causes, prevention, diagnosis, and treatment of heart, blood vessel, lung, blood diseases, and sleep disorders conducted in its own laboratories and by scientific institutions and individuals supported by research grants and contracts. It plans and directs research in development, trial, and evaluation of interventions and devices related to prevention, treatment, and rehabilitation of patients. The Institute conducts research on clinical use of blood and all aspects of the management of blood resources. It supports research training and career development of new and established researchers in fundamental sciences and clinical disciplines in its disease areas, in transfusion medicine, and in the area of sleep disorders.

Contents

Foreword v

Introduction 1

Minority-Related Programs Funded by the NHLBI, FY 1997 7

Prevention, Education, and Control . . 21

Appendixes 27

1. **Table 1: Summary of NHLBI Minority Support by Program, FY 1997** 27
2. **Publications of Interest** 30
3. **Abbreviations** 40

Index of Programs 41

Foreword

I am pleased to present the twelfth report on the minority programs of the National Heart, Lung, and Blood Institute (NHLBI). It provides a broad overview of the Institute's continued commitment to minority research, training, and education programs and activities and a description of those supported during FY 1997. NHLBI support for minority programs and activities exceeded $132 million that year.

The Institute is recognized as a leader in the national effort to reduce the disproportionate burden of disease among America's minority populations. Much of the research supported by the Institute has led to a better understanding and improved treatment of diseases that disproportionately affect minority Americans. In the area of sickle cell disease (SCD), noteworthy progress has been made in reducing first-time stroke in children at high risk. In 1997, the Stroke Prevention in Sickle Cell Anemia trial demonstrated a 90 percent reduction in stroke risk with administration of prophylactic blood transfusions. Results from the Multicenter Study of Hydroxyurea in Sickle Cell Anemia led to the recent approval by the Food and Drug Administration of hydroxyurea for use in adult patients with SCD. Hydroxyurea is the first drug proven to reduce the number of painful crises, hospitalizations, and acute chest syndrome episodes, and the need for blood transfusions in such patients.

The NHLBI continues to support research training and career development programs that encourage minority individuals to get involved in the exciting research being funded by the Institute. These programs are available to new and established investigators in basic and clinical research. Several of the programs were initiated especially to assist minority individuals in gaining research skills in areas related to cardiovascular, pulmonary, and blood health and diseases, transfusion medicine, and sleep disorders.

It is my pleasure to share this report on the *Minority Programs of the National Heart, Lung, and Blood Institute, FY 1997* with you. We view these activities with pride and are confident that the future will bring continuing improvements in the health of America's minority populations.

Claude Lenfant, M.D.
Director
National Heart, Lung, and Blood Institute

Introduction

Introduction

During the last 30 years, the American people have witnessed a significant improvement in treatment and control of cardiovascular, lung, and blood diseases. Although heart and cerebrovascular diseases still rank as the first and third leading causes of death, respectively, the death rates for them have declined remarkably. The age-adjusted death rate for cardiovascular disease (CVD) overall decreased 59 percent between 1950 and 1996. Much of this progress is the result of research and public education efforts supported by the National Heart, Lung, and Blood Institute (NHLBI).

Despite remarkable progress in health care over the last few decades, minorities still bear a disproportionate share of death and disability, and the gap appears to be widening for some diseases. In 1980, the age-adjusted death rates for coronary heart disease (CHD) were identical for blacks and whites. Although mortality rates have continued to decline for both, the pace has been slower for blacks, and therefore by 1994, the CHD death rate was 14 percent higher in blacks than in whites. Moreover, the rates for middle-aged blacks are higher than for middle-aged whites, so that CHD deaths tend to occur in blacks about 5 years earlier than in whites.

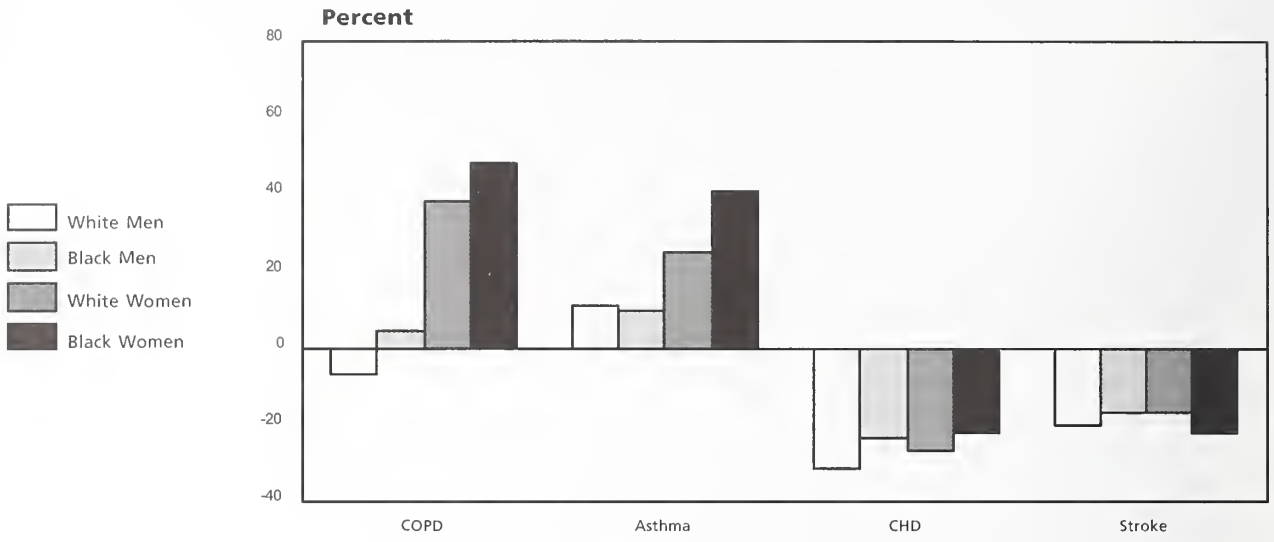
Blacks have higher prevalence and death rates than whites for heart failure, hypertension, stroke, asthma, diabetes, and sickle cell disease (SCD). Hispanics experience a disproportionately high prevalence of asthma, diabetes, and high blood cholesterol. Diabetes is particularly prevalent among some groups of American Indians.

Exploration of racial and ethnic differences in cardiovascular, lung, blood, and sleep health and disease is a multifaceted process. The programs described in this report encompass population-based studies; basic and clinical research on physiological and genetic factors; clinical trials for testing the safety and efficacy of drugs, surgical procedures, or lifestyle interventions; and demonstration and education research. Some programs are directed specifically toward minority populations. Others include minority subjects as part of a larger study population to ensure that the overall findings are valid or at least account for variations in mixed populations.

The NHLBI supports multidisciplinary research centers at universities and hospitals around the country. Two examples of programs that focus on health issues of concern to minorities are the Specialized Centers of Research (SCOR) in Ischemic Heart Disease in Blacks and the Comprehensive Sickle Cell Centers. Each program combines basic and clinical research. The Comprehensive Sickle Cell Centers also include research training and community service projects.

Community-based education and intervention programs play a large role in NHLBI efforts to reduce the rate and severity of CVD and other life-threatening diseases in minority populations. Examples of current programs directed to the needs of specific minority or ethnic populations include the National Physicians' Network, to encourage physicians who provide care to blacks to become more actively involved in prevention and education activities in black communities; the Latino CVD Prevention and Outreach Initiative, "*Salud para su Corazón*" (Health for Your Heart), to raise awareness of CVD prevention and promote heart-healthy lifestyles among Latinos in the Washington, D.C., metropolitan area; and Building Healthy Hearts for American Indians, to provide information on good health care and promote heart health among American Indians.

Change in Death Rates for Selected Causes by Race and Gender, U.S., 1985-95



The NHLBI works directly with local community leadership in the design and implementation of its programs to ensure that they are appropriate and meet community needs. For example, churches and other organizations have been extremely successful in encouraging local participation in community blood pressure and cholesterol screenings and in raising awareness of the need to reduce CHD risk factors. Building partnerships with local organizations and incorporating community-led activities into interventions also enable communities to design or continue effective interventions on their own after an Institute study ends.

The New Frontier

Recent developments in molecular and genetic methods have enabled researchers to expand the scope of knowledge for diseases affecting minority populations and to explore innovative therapeutic strategies. Rapid advances in CVD, asthma, and SCD research offer great promise for improving minority health.

Hypertension is a significant clinical and public health problem for blacks, who are more likely to develop the disease, develop it earlier and in a more severe form, and die from it at a younger age than the U.S. population as a whole. The mortality rate for hypertension in blacks is substantially higher than in whites, and among blacks who do not die of hypertension, the risk of stroke is 50 percent higher, the incidence of left ventricular hypertrophy (LVH)—an enlarged heart—is 30 percent greater, and the likelihood of kidney failure or end-stage renal disease is 3 times more common than in whites.

Approximately 45 percent of interindividual differences in blood pressure may be accounted for by genetic makeup. Discovery of genes whose variants are associated with high blood pressure may suggest rational therapeutic approaches and new preventive measures. A genetic approach may also offer crucial insights into biochemical and physiological pathways that link other major CVD risk factors, such as obesity and diabetes, to high blood pressure.

Obesity is the only CVD risk factor that is not showing improvement in the United States. The higher prevalence of obesity in black women has been hypothesized to account in part for their excess CVD morbidity and mortality. To address this problem and in an effort to prevent obesity, the NHLBI is investigating ways to decrease weight gain in young black girls during the high-risk transitional period from prepuberty to puberty.

Adult-onset diabetes also has strong physiologic ties to CVD. The majority of patients with diabetes mellitus die of CVD complications rather than of causes associated directly with glucose control. A disproportionate number of them are from minority groups such as blacks, Hispanics, and American Indians. To examine possible links between the development of diabetes and other major CVD risk factors such as obesity and hypertension, the Institute is supporting several studies on the association between insulin and insulin resistance and CVD risk factor development in Mexican Americans, blacks, and non-Hispanic whites.

Asthma is a chronic inflammatory obstructive airway disease characterized by acute episodes of bronchial spasm. During the last 20 years, mortality and morbidity from the disease have increased, especially among minority populations. The reasons for this increase are unclear but may include genetics, the physical environment, income level and access to quality health care, or cultural and social factors.

In 1997, the NHLBI convened an expert panel to update its 1991 asthma clinical management guidelines. The updated report confirms the basic principles of asthma management outlined in the first report. It also identifies significant gaps in science and recommends important directions for future research such as genetic and environmental interactions that lead to the onset of asthma; noninvasive measures of airway inflammation; objective measures for diagnosing different asthma syndromes and their severity; and benefits and potential side effects of asthma therapy in young children.

Initial findings from two independent investigations offer promising directions for further asthma research. The results suggest that genetic defects in the beta-adrenergic system may contribute to susceptibility to asthma development, various clinical expressions of the disease, and individual response to therapy. Genetic studies that include minorities will provide data to determine the causes and clinical manifestations of asthma in the population and identify possible racial differences in effectiveness of asthma treatment regimens. Based on information obtained, it may be possible to develop asthma treatment tailored to the specific need of the individual.

In the last few years, the NHLBI has made significant progress in improving treatment options and quality of life for patients with SCD, a disease that occurs in approximately 1 in every 500 black births and 1 in every 1,250 Hispanic-American births. SCD is an inherited blood disorder that is characterized primarily by chronic anemia and periodic episodes of pain. However, all patients do not experience the same level of discomfort or disabilities associated with the disease; symptoms can range from mild to very severe.

Stroke occurs in about 10 percent of children with SCD and is a major cause of morbidity. The Stroke Prevention in Sickle Cell Anemia trial was terminated early, and a clinical alert was issued by the Institute in September 1997, when investigators concluded that prophylactic blood transfusions greatly reduced the rate of stroke in high-risk children with SCD.

Based on encouraging results from the 1995 Multicenter Study of Hydroxyurea in Sickle Cell Anemia, the first effective treatment for adult individuals with severe SCD has been approved recently by the Food and Drug Administration. The long-term side effects of the drug and its effects in children with SCD are still being studied.

Bone marrow transplantation as a potential cure for SCD is another area that is receiving much attention. In 1996, it was shown to provide a cure for children with severe SCD in the few cases where a good tissue match was available. Although many of the risks associated with the procedure have been reduced, bone marrow transplantation is not yet an option for most patients with SCD. Gene therapy techniques for correcting the hemoglobin gene defect may ultimately provide the best hope for a cure.

Research Training and Career Development

Increasing the number of minority scientists is an important goal of the NHLBI. The Institute supports research training and career development programs for people at all levels, from high school students to faculty researchers, in areas relevant to

cardiovascular, lung, and blood health and disease, transfusion medicine, and sleep disorders. Minority individuals are encouraged to participate in all these programs.

The Institute supports a wide variety of minority-specific research training and career development programs as well. These programs encompass training grants to graduate students and postdoctoral researchers, awards to institutions for faculty, curriculum development in research areas relevant to the NHLBI, and research internships for students at the Institute's laboratories.

The Institute also participates in several NIH-wide programs. In one of them, the NHLBI provides supplemental support to active research grants to enable principal investigators to hire individuals from underrepresented minority groups as research staff. Since 1988, the Institute has provided the largest financial support of NIH components for these supplements.

Collaborative research training partnerships between research-intensive and minority-serving colleges and universities are emerging as an innovative way to boost minority recruitment and retention in biomedical and behavioral sciences, stretch limited educational and research resources, and enhance available research opportunities. The NHLBI has developed and distributed guidance to assist academic institutions with the formation of these collaborative partnerships.

Looking to the Future

As the Nation moves toward the 21st century, many of the health disparities observed among various populations will continue to be important concerns of the Institute. The NHLBI will continue to support investigations that examine differences in health status and prevalence of disease between minority and nonminority populations in an effort to improve the health of minority individuals. A number of new programs and activities are already being planned for the coming years. One of them, the Jackson Heart Study, will examine CVD in blacks in Jackson, Mississippi. The primary goals of the study are to identify risk factors for development and progression of CVD in blacks; strengthen the existing Jackson site of the Atherosclerosis Risk in Communities study; and build research capabilities at minority-serving academic institutions.

Another area of importance is improving asthma health care within communities. Tailoring therapies and interventions more specifically to individual needs will improve the quality of health care for asthma patients. One proposed approach is to develop an asthma surveillance system to monitor how different types of asthma are influenced by genetic, physiologic, or environmental factors. Data gathered through this effort would allow children at high risk to be identified so that appropriate community-wide intervention programs can be developed. On the national scale, such a project could monitor changes in asthma and asthma care in children.

As the U.S. population diversifies and the minority segment of the population increases, questions of racial and ethnic differences in socioeconomic, environmental, physiological, and genetic factors become more complex, and their impact on public health continues to grow. The Institute recognizes that it has an important role to play in seeking answers to these questions and promises to meet this challenge.

Minority-Related Programs Funded by the NHLBI—Fiscal Year 1997

Minority-Related Programs Funded by the NHLBI— Fiscal Year 1997

Described below are selected minority-related activities supported in FY 1997 within the Institute's major research areas. These programs are administered through five extramural units—the Division of Heart and Vascular Diseases (DHVD), the Division of Epidemiology and Clinical Applications (DECA), the Division of Lung Diseases (DLD), the Division of Blood Diseases and Resources (DBDR), and the National Center on Sleep Disorders Research (NCSDR)—and one intramural unit, the Division of Intramural Research (DIR). Research activities are presented in alphabetical order by program, with date of initiation indicated.

Heart and Vascular Diseases

Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT), 1993

Comparison of antihypertensive therapies

The ALLHAT is a clinical trial to determine whether newer (and more expensive) antihypertensive treatments (angiotensin-converting-enzyme inhibitors, calcium channel blockers, and alpha-adrenergic blockers) are as effective as or more effective than standard diuretic drug therapy in reducing the incidence of major coronary heart disease (CHD) events in high-risk hypertensive patients. A lipid-lowering treatment is also being tested in a subset of patients.

Prevalence and death rates for hypertension are higher in blacks than in whites. Available evidence suggests that blacks and whites experience different levels of therapeutic benefit and side effects for specific antihypertensive drugs. This clinical trial, involving more than 40,000 subjects (36 percent black) within a 6-year period, examines the effects of several classes of antihypertensive drugs among racial and ethnic groups. The results may indicate which treatments are most effective for whom in preventing heart attacks. (DECA)

Atherosclerosis Risk in Communities (ARIC), 1985

CHD risk factors, atherosclerosis, and CHD events

The ARIC study examines the association of CHD risk factors with atherosclerosis by race, gender, and geographic location. It focuses on early detection of cerebrovascular disease before symptoms, heart attacks, or strokes occur. The study consists of two groups, a cohort component of approximately 16,000 individuals—4,000 from each of 4 diverse communities—and a community surveillance component of 315,000 residents ages 35 to 74 years from the 4 communities. Three of the cohort components represent the ethnic mix of their community while the fourth is exclusively black.

CHD hospitalization and mortality rates increase with age and are greater in men than in women in every age group. Results from the ARIC study indicate that, in general, white men have higher hospitalization rates for CHD than black men, but among younger men, blacks have higher CHD mortality rates. Black women have higher hospitalization and mortality rates than white women. Blacks have more hypertension and diabetes, higher insulin levels, higher lipoprotein(a) blood levels, higher levels of some clotting factors, and lower blood potassium levels than whites, but they have less triglyceridemia for a given obesity level than whites. The study found a strong association between carotid wall thickness and existing clinical CVD, and an MI incidence 6-7 times greater among women with

carotid thickening than in those without. In men, MI incidence was approximately 3 times more common in those with thickening. Such findings clearly establish carotid atherosclerosis as a strong, independent, and reliable predictor of clinical events. (DECA)

Atherosclerosis in Minority Populations Studies, 1988

Interracial differences in CHD Mechanisms

The goal of these studies is to identify differences in mechanisms underlying the genesis of CHD among various ethnic and racial populations. The projects focus on cellular and molecular processes in formation of early preatherosclerotic lesions, genes involved in variation of susceptibility to CHD, and the role of insulin in CHD. (DHVD)

Biobehavioral Factors—Etiology of Hypertension in Blacks, 1983

Physiology and behavior in hypertension

This cluster of grants investigates the relationship between physiological mechanisms and behavioral factors in development of hypertension in blacks. Results appear to confirm the existence of black-white differences in stress-induced blood pressure response. However, findings clearly suggest that black-white differences in blood pressure status, diet, sodium sensitivity, glucose tolerance, and type of stressor all influence the degree or pattern of reactivity observed.

Research in this program area is continuing with strategies (including ambulatory blood pressure monitoring and programmed environmental challenges) that will further clarify the complex association between biobehavioral factors and the high prevalence of hypertension among blacks. (DECA)

Bogalusa Heart Study, 1971

CVD risk factors in black and white children

This long-term study examines the early natural history of atherosclerosis and essential hypertension in a cohort of 5,000 black and white residents of a Louisiana community who were first examined as children and are now adults. It investigates physiological, genetic, and lifestyle factors that contribute to CVD, focusing on the impact of genetic determinants on the evolution of CVD risk factors from childhood to morbidity in the adult population over time. Weight, blood pressure, blood-lipid levels, homocysteine, glucose-insulin, fibrinogen, and plasminogen activator inhibitor-1 have been measured in a large group of children who were tracked into adulthood. Environmental factors such as socio-demographic characteristics, tobacco and alcohol use, the use of oral contraceptives, physical activity, and diet were also included. Results from this study confirm that the physiological and behavioral risk factors for heart disease and stroke begin in childhood. (DECA)

Bypass Angioplasty Revascularization Investigation (BARI), 1987

Comparison of two revascularization strategies in patients with multivessel CHD

The purpose of this international study is to compare the relative risks and benefits of two revascularization strategies—coronary artery bypass graft surgery and percutaneous transluminal coronary angioplasty—in patients with multivessel CHD and severe angina or ischemia. Five-year mortality rates showed that for most patients, bypass surgery and angioplasty are equally effective in preserving life over the long term, but for patients with diabetes, bypass surgery promotes a much higher rate of survival. This finding is important for blacks, Hispanics, American Indians, and other minority groups with a high prevalence of diabetes. The trial will extend follow-up of cohorts for a minimum of 10 years and determine relative efficacy of angioplasty versus bypass surgery in subgroups of women, blacks, and the elderly. (DHVD)

Cardiovascular Health Study (CHS), 1988

Risk factors for CVD and stroke in older adults

The CHS is a population-based, longitudinal study of risk factors for development and progression of CHD and stroke in elderly adults. Its objectives are to identify associations between risk factors and clinical disease development and to determine whether presence or progression of subclinical disease (abnormalities detected in the absence of signs or symptoms) is a better predictor of clinical disease than traditional risk factors.

Results indicate that older subjects without reported clinical symptoms have high rates of subclinical

atherosclerosis, carotid artery wall thickening, and poor circulation in their lower limbs. Results for blacks and whites contradict findings from previous national studies that showed lower CVD incidence in older blacks than in older whites. One-year incidence rates of CVD are similar for elderly blacks and whites, but risk-factor levels differ significantly between the two groups. (DECA)

Cardiovascular Risk Factor Studies and Prevention in Children, 1987

CVD risk factor reduction in children

This set of projects tests the effectiveness of educational and other interventions in reducing risk factors for CVD in children. A substantial number of projects contain specific minority components. Programs may target a minority population, take place in a school with a large minority enrollment, or provide language- and culture-specific interventions and information related to CVD. Current studies are investigating factors that influence adoption and modification of diet and physical activity habits in childhood, the role of anger and hostility in risk factor development, and the relationship between physical training and blood pressure reduction among youth at high risk. (DECA)

Child and Adolescent Trial for Cardiovascular Health (CATCH), 1987

School-based interventions for reducing CVD risk in children

This trial examines the effectiveness of school and home interventions for reducing CVD risk. School-based interventions involve school food service modifications, enhanced physical education, classroom health curricula, and family education. The main trial included approximately 10,000 children, 35 percent of whom were Hispanic or black. Results show that school-based interventions are effective in lowering fat content in school lunches and increasing physical activity during physical education classes. Behavioral and physiological risk factors are being tracked into adolescent years. Materials developed from the CATCH demonstration project can be accessed via the Internet at: http://www.nhlbi.nih.gov/nhlbi/cardio/other/prof/catchfly.htm (DECA)

Collaborative Projects on Minority Health, 1993

Crosscutting research in minority health

In addition to CVD and sickle cell disease (SCD), a number of pulmonary diseases, including sarcoidosis, asthma, and tuberculosis (TB), disproportionately affect minorities. This program fosters collaborative clinical research on new and improved approaches for diagnosis, management, and prevention of cardiovascular, lung, and blood diseases in minority populations. Some of the collaborations cut across traditional boundaries to study conditions that affect more than one disease area. (DHVD, DECA, DLD, DBDR)

Coronary Artery Risk Development in Young Adults (CARDIA), 1985

Development of CVD risk factors between young adulthood and middle age

The purpose of this long-term study among 5,115 participants, 51 percent of whom are black, is to investigate the distribution and evolution of CHD risk factors during the critical years of transition from adolescence through young adulthood to middle age. Lifestyles that influence changes in risk factors during this age span are being examined. Individuals were ages 18 to 30 years at entry; 55 percent are women.

The CARDIA study has confirmed that obesity is more common in blacks than in whites, especially among black women, and that it occurs disproportionately among individuals of low socioeconomic status. Physical inactivity and pregnancy are associated with weight gain during young adulthood. Additional findings indicate a positive association between hostility and cigarette smoking, alcohol consumption, and caloric intake. A tenfold difference in smoking prevalence exists between individuals in the highest and lowest education levels. New cases of hypertension are more frequent among black adults than among white adults. Elevated insulin levels are strongly associated with unfavorable levels of CVD risk factors in young adults. (DECA)

Diabetes and Cardiovascular Diseases Among Hispanics, 1979

CVD risk factors, CVD, and diabetes in Hispanics

This study examines the prevalence of diabetes and CVD in Mexican Americans and non-Hispanic whites. Despite poorer CVD risk profiles in the Mexican-American population, Mexican-American men have lower CVD mortality than non-Hispanic white men. However, death rates for CVD are similar for women in both groups. (DECA)

Dietary Intervention Study in Children (DISC), 1987

Dietary intervention in children with elevated low-density lipoprotein (LDL) cholesterol levels

The primary objectives of this study are to assess feasibility, efficacy, and safety of dietary intervention in healthy children, ages 8 to 10 years at entry, who have elevated blood levels of LDL cholesterol. The full-scale trial includes 663 children (8 percent black, 6 percent Hispanic, 1 percent Asian, and 2 percent other minority groups) assigned at random to either a usual care (control) group or an intervention group. The intervention group participated in a 3-year dietary intervention involving child and family. The DISC was extended an additional 4 years (DISC II) to assess long-term safety and efficacy of dietary intervention. Results from the DISC showed that, compared with the usual-care group, children in the intervention group had significantly lower intake of total fat, saturated fat, and cholesterol. After 3 years, their LDL-cholesterol levels were lower than those of the usual-care group. Growth and development measurements showed no significant differences between the two groups. Follow-up visits are being continued until the children are 18 years of age. (DECA)

Epidemiological and Clinical Minority Studies, 1950

CHD mortality and risk factors in blacks and Hispanics

The overall goal of this cluster of epidemiological and clinical studies is to identify CHD issues unique to, or problematic for, one or more minority groups. Some studies explore the comparatively high prevalence, incidence, or mortality of a disease in a minority group. Others address issues for which current data are sparse for a specific minority population. Minority-specific issues under investigation include CHD risk factors, CHD predictors, epidemiology of atherosclerosis, and the relationship between socioeconomic status and hypertensive disease risk in blacks; Hispanic-versus-white survival rates following MI; and the relationship between sodium intake and blood pressure. (DECA)

Genetic Determinants of High Blood Pressure, 1995

Research collaborations in genetics of high blood pressure

The objective of this program is to establish networks of collaborating investigators to identify major genetic determinants of high blood pressure using modern molecular genetic tools. In addition, interactions between genetic and nongenetic determinants of hypertension in defined age, gender, and ethnic and racial subgroups are being studied. An essential feature of the collaborative networks is sharing of technology, data, skills, biological materials, and population resources. (DHVD, DECA)

Genetics, Response to Exercise, and Risk Factors, 1992

Genetic factors in CVD and metabolic response to exercise

The goal of this research is to document exercise-induced changes in CVD and diabetes risk factors and the contribution of individual genetic factors to these changes in a group of sedentary subjects participating in a 20-week endurance exercise training program. The participants are parents and their adult biological offspring; 495 of them come from 98 white families and 270 individuals come from 102 black families.

Oxygen uptake and cardiac performance are measured during exercise before and after the training program, as are blood lipids and cholesterol, glucose tolerance and insulin response, steroid hormones, resting blood pressure, and body fat. Information concerning dietary habits, level of habitual physical activity, and other lifestyle components is obtained by questionnaires. Genetic analyses are used to assess heritability levels and patterns for different responses to regular exercise. (DHVD)

Honolulu Heart Program (HHP), 1965

CHD and stroke risks for Hawaiian men of Japanese descent and native Japanese men

This long-term study has ended; only a small amount of data analysis remains to be completed. The results showed that incidence, prevalence, and mortality rates of CHD were much higher in the Japanese cohort living in Hawaii than in the cohort living in Japan. Stroke rates, however, were much lower in the cohort living in Hawaii. Participants with hypertension at entry were found to have a twofold increased risk of death 10 years later than normotensive men. In addition, the findings indicated that cigarette smoking is associated with all forms of stroke and that smoking cessation reduces the risk of stroke; obesity is associated with CHD across all levels of hypertensive status. (DECA)

Insulin Resistance Atherosclerosis Study (IRAS), 1991

Relationship of insulin resistance to CVD risk factors in three ethnic populations

The IRAS investigates associations of insulin and insulin resistance with CVD and its risk factors in non-Hispanic whites, Mexican Americans, and blacks. Previous studies indicated that these associations differ between whites and minority groups. The IRAS includes 1,608 men and women with glucose tolerance ranging from normal to overt diabetes. Family history, physical examination, tests for glucose tolerance and insulin resistance, and ultrasound measurements of carotid artery wall thickness provided the initial data. (DHVD)

Jackson Heart Study, 1997

Epidemiologic studies of cardiovascular disease in blacks

The purpose of this program is to establish a single-site epidemiological study of CVD in blacks similar to those previously established in Framingham, Massachusetts, and Honolulu, Hawaii. The primary goals are to identify risk factors for development and progression of CVD in blacks, with emphasis on manifestations related to hypertension (left-ventricle hypertrophy [LVH], congestive heart failure, coronary disease, stroke, and renovascular disease); enhance recruitment, cohort retention, and scientific productivity of the existing Jackson site of the ARIC study; and build research capabilities at minority institutions. The last goal will be addressed by developing partnerships between minority and non-minority institutions, expanding minority investigator participation in large-scale epidemiological studies, and training black students for careers in epidemiology and public health.

Currently, the Jackson ARIC cohort consists of approximately 3,500 black men and women ages 45 to 64 years at baseline. To augment the limited age span and generalizability of this cohort, an additional 4,300 subjects outside the age range of the current cohort will be recruited. (DECA)

Mechanisms of Damage Caused by Cardiopulmonary Bypass, 1991

Humoral, cellular, and other responses to cardiopulmonary bypass

The objectives of this program are to study mechanisms of multisystem damage caused by cardiopulmonary bypass surgery and to develop methods to prevent or minimize adverse postoperative effects.

More than 375,000 cardiopulmonary bypass procedures are performed in the United States each year. Unfortunately, the procedure can result in considerable pulmonary, cardiac, neurological, and renal dysfunction as well as generalized edema and diffuse bleeding. These adverse effects cause significant morbidity and mortality, especially in the very young, the elderly, and the very ill. (DHVD)

NHLBI Growth and Health Study (NGHS), 1985

Predictors of obesity in young black and white women

The purpose of this program is to examine the development of obesity and CVD risk factors in a cohort of 2,379 girls (51 percent black), ages 9 to 10 years at entry. The study is designed to determine whether the observed black-white disparity in development of obesity in pubescent girls results from differences in diet, physical activity, or psychosocial, socioeconomic, or other environmental factors and whether such distinctions, in turn, lead to black-white differences in other CVD risk factors, such as high blood pressure and blood lipid levels.

No significant race differences in body composition or blood pressure were apparent in prepubertal subjects. However, black girls appeared to have lower LDL-cholesterol and triglycerides and higher HDL-cholesterol. By age 13 to 14 years, black girls weighed significantly more and had significantly larger skinfold thicknesses and circumferences than white girls, but these changes were not accompanied by changes in CVD risk factors associated with obesity.

Data from the CARDIA study indicate that at ages 18 to 24 years, black women have significantly higher blood pressure and LDL-cholesterol, suggesting that obesity-related changes in CVD risk factors occur between late adolescence and early adulthood. The NGHS will follow this cohort of young women into early adulthood to gain information that could lead to the improvement of women's health. (DECA)

Pathobiological Determinants of Atherosclerosis in Youth (PDAY), 1985

Postmortem examination of atherosclerosis development

This program examines development of coronary and aortic atherosclerosis from adolescence to adulthood through autopsies of young persons who died of accidental causes. The study has collected 1,532 cases; 31 percent of them involved black subjects.

PDAY findings show that aortic and coronary atherosclerosis begins in childhood and progresses to form raised lesions between ages 30 and 34 years. Susceptibility to atherosclerosis is similar in men and women and in blacks and whites. (DHVD)

Pathways: Primary Prevention of Obesity in American Indians, 1993

School-based interventions to prevent obesity in American Indian children

Pathways is a randomized trial designed to prevent obesity in American Indian children through culturally appropriate, school-based intervention that promotes healthful eating behaviors and increased physical activity. A cohort of 1,706 third graders from 21 schools assigned to intervention and 20 comparison schools are participating in the study. The program has four intervention components: classroom curriculum, physical activity, family involvement, and food service. (DECA)

Specialized Centers of Research (SCOR) in Ischemic Heart Disease in Blacks, 1995

Multidisciplinary research on heart disease in blacks

The goals of this SCOR are to elucidate the pathophysiological basis for excess morbidity and mortality from ischemic heart disease in blacks and to develop effective interventions to address this problem. Racial differences in electrocardiogram (ECG) profiles, high prevalence of hypertension, and LVH may contribute to a higher prevalence of sudden cardiac death in blacks. Coexistence of diabetes and hypertension, another common pattern in blacks, markedly increases the risk and severity of heart disease and accelerates the course of cardiomyopathy.

Investigators are studying whether abnormalities in coronary reactivity in black diabetics are reversible, in part, by interventions; performing genetic analysis in large families in an attempt to identify a gene responsible for manifestations of ischemic heart disease in blacks; and defining mechanisms by which insulin resistance contributes to hypertension and LVH. (DHVD)

Strong Heart Study: Cardiovascular Disease in American Indians, 1988

CVD in American Indians

The purpose of this program, the largest health study of American Indians ever undertaken, is to determine morbidity and mortality from CVD among American Indians and to compare CVD risk factor levels among groups living in three different geographic areas. The study population includes three Sioux tribes from North and South Dakota, seven tribes from Oklahoma, and two Indian communities in Arizona. A common protocol for all three sites includes morbidity and mortality surveys from medical records and physical examinations of 4,500 men and women ages 45 to 74 years.

CVD risk factor profiles differ considerably among the three regional groups. All tribes have a high prevalence of obesity and diabetes, but their hypertension rates are lower than those of whites with

similar risk factor profiles. Northern groups have higher CVD rates than the U.S. average, but those in the Southwest have surprisingly low rates. For example, the South Dakota Sioux have a twofold higher prevalence of heart disease than the Pima and Maricopa of Arizona. Regional differences also appear in smoking rates and blood lipoprotein levels. Cultural factors such as intermarriage with other racial groups may play a role in some of the risk profile differences. (DECA)

Lung Diseases[1]

Alveolar Macrophages and Defense of the Lung in AIDS, 1989

Effect of human immunodeficiency virus (HIV) on immune defense in the lung

This program investigates HIV infection, viral expression, and resulting dysfunction in alveolar macrophages, cells that serve as part of the lung's local immune system. Information derived from the study contributes to the understanding of the lung's immune defenses in patients infected with HIV. It is particularly relevant for minority populations which experience a disproportionate incidence of HIV and AIDS. Findings from this program suggest that active TB infection may accelerate the course of HIV disease.

Childhood Asthma Management Program (CAMP), 1991

Comparison of asthma drugs in children

The study compares use of asthma drugs in more than 1,000 children, of whom 31 percent are minorities, to determine the long-term effects of three asthma therapies on lung growth and development. The treatments are an inhaled corticosteroid (budesonide), a non-steroid anti-inflammatory (nedocromil), and a bronchodilator (albuterol). Secondary objectives include determining effects of the three modes of therapy on lung function, frequency and severity of asthma symptoms, long-term safety and side effects, and physical and psychological growth and development.

[1]All programs in this section are administered by the Division of Lung Diseases.

Effect of Smoking on Lung Diseases Studies, 1985

Impact of cigarette smoking on lung function

This cluster of studies examines the separate and combined effects of *in utero* and postnatal environmental tobacco smoke exposure on lung function and respiratory health. It also investigates the problem of high rates of postpartum relapse in women after sustained abstinence from smoking during pregnancy.

Smoking is a strong risk factor for asthma, which is more prevalent in blacks and Hispanics than in whites. Although for most groups smoking rates are declining significantly, smoking rates for young women of all races have increased in the past 10 years. In one study, longitudinal data on change processes involved in smoking cessation are compared with data from existing studies of lung function and related factors in children ages 5 to 17 years to identify mechanisms by which passive cigarette smoke exposure alters respiratory health and may lead to chronic obstructive pulmonary disease (COPD).

Host Factors Controlling Individual Susceptibility to HIV-Associated Pulmonary Disease, 1997

Cellular and molecular mechanisms that influence host susceptibility to HIV-associated lung diseases

Pulmonary disease associated with HIV infection continues to be a major cause of morbidity and mortality. The purpose of this program is to investigate cellular and molecular mechanisms that influence host susceptibility to HIV-associated lung diseases, including TB, fungal infections, *Pneumocystis carinii* pneumonia, and pulmonary Kaposi sarcoma.

Pediatric Pulmonary and Cardiovascular Complications of HIV Infection (P2C2), 1989

Heart and lung disorders in infants and children with HIV infection

The objective of this study is to determine the prevalence and natural history of pulmonary and cardiac complications associated with HIV infection *in utero*, in infancy, and during early childhood. HIV-infected pregnant women were recruited before delivery and received prenatal care, including fetal echocardiography and viral testing; their infants were enrolled at birth. Of the 800 children enrolled in the

study, 49 percent are black and 33 percent are Hispanic.

Preliminary results showed that low maternal CD4 cell counts correlated with low neonatal CD4 cell counts and were associated with the development of *Pneumocystis carinii* pneumonia during the first year of life. Likewise, bacterial, viral, and *Pneumocystis carinii* pneumonias were significantly increased in the HIV-infected infants during this period. The lung function in uninfected children born to HIV-infected mothers appeared to be normal. In 1996, the P2C2 study joined an international effort to pool and compare data with nine other pediatric AIDS studies in a meta-analysis to determine the effect of different modes of delivery on the risk of maternal-infant HIV transmission. (DLD, DHVD)

Regulation of Human Immunodeficiency Virus Activation in the Lung, 1996

Mechanisms by which cofactors may lead to increased HIV-associated pulmonary disease

The primary objective of this program is to identify cellular and molecular mechanisms that activate HIV or allow the virus to remain in a quiescent state in lung cells. Research focuses on risk factors and cofactors operating in the lungs that lead to aggravation of pulmonary disease and on the mechanisms by which it, in turn, may lead to accelerated progression of HIV.

Sarcoidosis Etiology: A Case-Control Study (ACCESS), 1995

Environmental and familial factors in sarcoidosis

The ACCESS investigates environmental and familial factors that may play a role in the development and progression of sarcoidosis. Sarcoidosis is a systemic granulomatous tissue disease of unknown origin that primarily affects the lungs and can be either self-limited or chronic and progressive. It is estimated to be several times more prevalent in blacks than in whites. The participants (a large percentage of whom are black) include 840 sarcoidosis patients and 1,680 control subjects. Investigators are addressing gender and ethnicity, both of which may play a role in sarcoidosis. The cases will be followed to study the natural history of sarcoidosis and identify risk factors for its progression. (DLD, DECA)

Sarcoidosis Program, 1980

Immunologic abnormalities in sarcoidosis

The objective of this program is to examine immunologic and inflammatory processes associated with pulmonary sarcoidosis. Research findings indicate that sarcoidosis is quite different from other interstitial lung diseases. A key discovery has been the presence of abundant and abnormally active immune cells in lungs of patients with the disease. Samples of these immune cells from patients are being analyzed by genetic and other methods to look for possible factors that initiate sarcoidosis.

Blood Diseases and Resources[2]

Coagulation, Platelets, and Thrombosis in Sickle Cell Disease Pathophysiology, 1995

Abnormal blood clotting in SCD

SCD is an inherited blood disorder characterized primarily by chronic anemia and periodic episodes of pain. The underlying problem involves a defective gene that causes abnormal hemoglobin to be formed, thereby distorting the shape of red blood cells. The sickled red blood cells tend to clump in narrow blood vessels, blocking the flow of blood.

This program investigates the roles of hemostasis and thrombosis in vascular damage that occurs with SCD. Both processes appear to contribute to the damage, but existing data are incomplete. Two major problems associated with SCD—stroke and acute chest syndrome—are probably thrombotic in origin. Studies of thrombosis and hemostatic activation in SCD will facilitate development of new therapies.

Comprehensive Sickle Cell Centers, 1972

Basic and applied research in SCD, patient counseling, training in diagnosis

The objective of this program is to provide an environment in which resources, facilities, and personnel can be coordinated to expedite development and application of new knowledge for improved

[2]All programs in this section are administered by the Division of Blood Diseases and Resources.

diagnosis, treatment, and prevention of SCD complications. The Centers combine basic, clinical, and applied research with demonstration programs in education, counseling, and diagnosis designed to bridge the gap between scientific inquiry and patient care.

Cooperative Study of Sickle Cell Disease (CSSCD): Continuation of the Newborn and Pediatric Cohort, 1994

Progression of SCD from infancy

The purpose of this study is to determine the natural history of SCD in patients whose disease is diagnosed within the first 6 months of life, identify patients at greatest risk for severe complications of the disease, and follow the clinical outcome and natural history of patients who have undergone bone marrow transplantation or other experimental therapies. One of the major objectives of the study is to follow newborns prospectively and examine issues related to growth and development, acute events such as infection and stroke, and major organ damage.

Gene Therapy for Sickle Cell Disease, 1994

Genetic strategies for treating SCD

The purpose of this program is to encourage basic and applied research leading to development of strategies to correct or replace the endogenous defective gene in SCD. A mutation in the β-globin gene causes sickle hemoglobin to be produced rather than normal hemoglobin and ultimately leads to pain and organ damage in patients. Proposed strategies include replacing the sickle β-globin gene with a normal β-globin gene, or repairing the sickle mutation in DNA. Either approach would require the use of bone marrow stem cells that are treated *in vitro* to alter their genetic makeup before their reintroduction into a patient.

Multicenter Study of Hydroxyurea in Sickle Cell Anemia (MSH), 1991

Trial of hydroxyurea therapy for SCD

The MSH is a randomized clinical trial to determine the efficacy of orally administered hydroxyurea to lower the rate of painful crises associated with SCD. More than 50 percent of patients with SCD have at least one painful crisis per year; occurrence of multiple pain events is associated with early death in young adults.

The MSH showed that adult patients who received hydroxyurea experienced a 50 percent reduction in the annual number of painful crises and hospitalizations without any short-term toxicity. Presently, the follow-up study is monitoring long-term benefits, physiological changes, and cancer incidence or other adverse events, if any, in patients receiving hydroxyurea therapy.

Sickle Cell Disease Therapy, 1996

Basic and applied research into therapeutic approaches in treating SCD

The purpose of the program is to find effective approaches for treatment of SCD. It encourages investigators to consider approaches that include identification of molecules capable of inhibiting sickle polymer formation, pharmacologic or genetic treatment to increase synthesis of fetal hemoglobin, and development of agents that stabilize the membranes of sickle red blood cells.

Sickle Cell Disease—Other Research

Cellular, molecular, and clinical factors in SCD; projects for better treatment and prevention

Several projects make up an integrated program of basic and clinical research in SCD. The goals of the overall program are to understand the disorder at the cellular, molecular, and clinical levels and to foster better treatment and prevention of serious complications.

Stroke Prevention in Sickle Cell Anemia (STOP), 1994

Prevention of stroke in children with SCD

This clinical trial tested the effectiveness of prophylactic transfusion therapy in reducing incidence of first-time stroke in children with SCD. Stroke occurs in about 10 percent of pediatric patients with SCD and is a major cause of morbidity. Secondary prevention programs based on blood transfusion have become standard care, but most patients have already suffered irreversible brain injury by the time they receive treatment.

Approximately 3,000 children with SCD were screened for risk of stroke by transcranial Doppler ultrasound to detect arterial abnormalities. A total of 130 high-risk pediatric patients, ages 2 to 16 years, were assigned randomly to receive either periodic prophylactic blood transfusion (63 patients) or standard supportive care (67 patients). After 1 year, only 1 child in the transfusion group, compared with 10 children in the standard care group, had a cerebral infarction. This difference represents a 90 percent relative decrease in the stroke rate.

The STOP trial, previously scheduled to continue until December 1998, was terminated early—on September 2, 1997—so that children who had been receiving standard supportive care could be offered an effective treatment to prevent first-time stroke. A clinical alert was issued on September 18 to announce that prophylactic blood transfusion greatly reduces the rate of stroke in children with SCD.

Viral Activation Transfusion Study (VATS), 1995

Risks of blood transfusion to HIV-infected patients

This clinical trial is designed to determine whether activation of latent HIV-1 and cytomegalovirus occurs following blood transfusion in HIV-1-infected persons, thereby adversely affecting their prognosis. If it does, many infected patients, including hemophiliacs and patients with SCD who have already contracted HIV through blood transfusion, are at increased risk of accelerated progression to full-blown AIDS when they receive another transfusion.

Viral Nucleic Acid Testing for HIV and Hepatitis C (HCV) in Donor Blood, 1997

Development of nucleic acid-based tests for HIV and HCV

The purpose of this program is to develop nucleic acid-based tests for HIV and HCV infections in blood. The goal is to refine a technique for amplification and detection of HIV nucleic acids in automated systems. Clinical studies would use the technique to test blood from donors and individuals in the early stages of HIV infection. The new test, if successful, would make direct DNA- and RNA-based tests for HIV and HCV feasible for large-scale donor and patient screening. This would reduce the "window period" in which such viral infections are undetectable by current antibody-based screening methods.

Building Research Capacity in the Minority Community

The NHLBI offers research training and career development programs at all stages in the professional development of an investigator, from high school to senior investigator levels. Programs include individual fellowships, training grants to institutions, programs to bridge the transition from training to independent research, and career development programs for clinicians and academic investigators. The following programs are supported specifically to encourage minority researchers and faculty to develop research skills in areas related to cardiovascular, lung, and blood health and diseases, transfusion medicine, and sleep disorders. Minority individuals are encouraged to apply for all mechanisms of support available through the NHLBI.

HBCU Research Scientist Award, 1996

Strengthening the research capabilities of HBCUs

The purpose of this award is to provide an opportunity for Historically Black Colleges and Universities (HBCUs) offering master's, Ph.D., or professional degrees to recruit established scientists to help expand their research base and to train students and expose them to the latest scientific advances. This award supports research in cardiovascular, lung, and blood health and disease, transfusion medicine, sleep disorders, and other related research. During Phase I of the award (12-18 months), the institution, with assistance from the NHLBI and the NIH Office of Research on Minority Health, recruits an established research investigator, arranges for laboratory facilities for the individual, and implements plans to begin Phase II. This phase was extended to 24 months. During Phase II (6 years), the recruited scientist begins to build or expand the research program at the HBCU and establishes collaborative partnerships.

Mentored Research Scientist Development Award for Minority Faculty, 1994

This program, formerly known as the Research Development Award for Minority Faculty, encourages

minority faculty to develop independent research skills and gain experience in advanced methods for basic and applied research in areas of cardiovascular, lung, and blood health and diseases, transfusion medicine, and sleep disorders. The program was created to increase the pool of highly trained minority investigators in these research areas.

Minority Biomedical Research Support (MBRS) Program, 1984

The MBRS program goals are to increase the number and quality of minority health scientists, strengthen the ability of eligible minority institutions to provide health career opportunities for their students, and conduct research in the health sciences. Target populations for this program include blacks, Hispanics, Asian Americans, Pacific Islanders, and American Indians.

Minority Biomedical Research Training Program, 1994

The Minority Biomedical Research Training program was established to increase the number of underrepresented minorities entering biomedical and clinical research. The program provides an opportunity for minority undergraduate, graduate, and health professional students majoring in life sciences to receive training in NHLBI intramural laboratories during the summer.

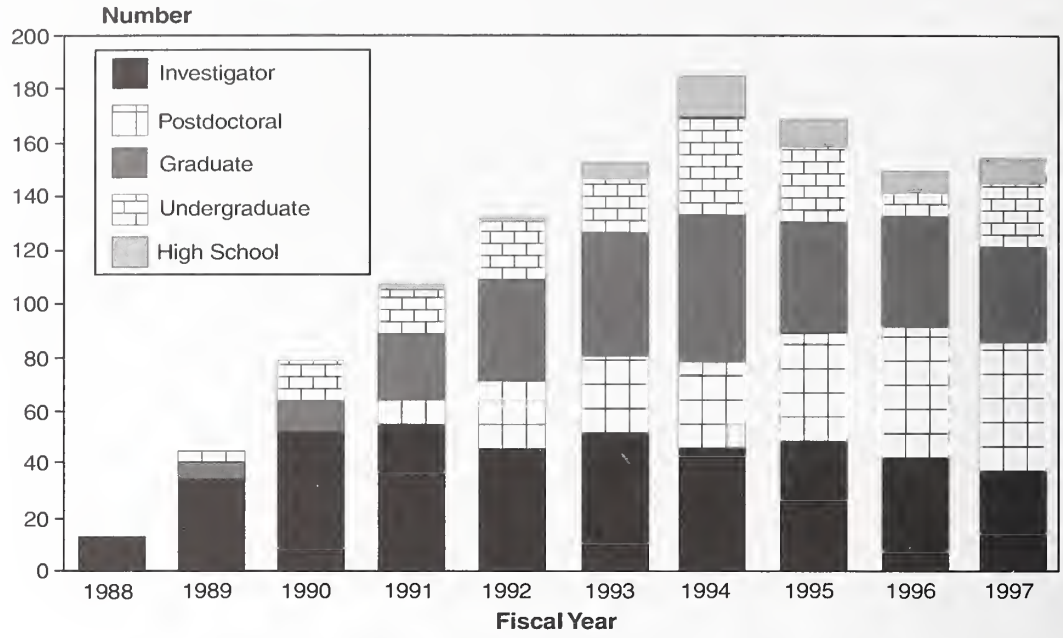
Minority Institutional Faculty Mentored Research Scientist Development Award, 1984

The purpose of this award, formerly known as the Minority School Faculty Development Award, is to support faculty investigators at minority schools who are engaged in research, prevention, control, and education in areas relevant to cardiovascular, pulmonary, and blood health and diseases, transfusion medicine, and sleep disorders. In recent years, the purpose of the program has been expanded to include an emphasis on science education.

Minority Institutional Research Training (MIRT) Program, 1984

The purpose of this award is to provide an opportunity for students enrolled at minority institutions to receive at least a year of research training in cardiovascular, pulmonary, or hematologic science. In addition to

NHLBI Minority Supplements Program



furthering their professional education, the program is designed to strengthen these scientific disciplines in the participating minority institutions. It is open to graduate students, health professional students, and postdoctoral researchers.

Minority Predoctoral Fellowship Program, 1992

The Minority Predoctoral Fellowship program provides up to 5 years of support to underrepresented minority students for research training leading to either a Ph.D. degree or a combined M.D./Ph.D. degree in the biomedical or behavioral sciences. It is anticipated that the program will encourage greater numbers of minorities to pursue graduate degrees and, eventually, careers in biomedical and behavioral research. The NHLBI supports projects in the program that are relevant to its areas of research.

NHLBI MARC Summer Research Training Program, 1989

The NHLBI MARC Summer Research Training program offers honor students participating in the Minority Access to Research Careers (MARC) program a 10-week summer research experience in the NHLBI intramural laboratories, where they work with some of the world's leading scientists. The program encourages MARC students to continue their training in cardiovascular, lung, and blood health and diseases, transfusion medicine, and sleep disorders.

Research Supplements for Underrepresented Minorities Program, 1988

The Research Supplements for Underrepresented Minorities program, formerly known as the Minority Investigator Research Supplements (MIRS), is part of the NIH-wide Initiative for Research Supplements for Underrepresented Minorities. It provides supplemental funds to ongoing research grants to encourage high school, undergraduate, and graduate school students; individuals in postdoctoral training; and minority investigators to pursue careers in biomedical or behavioral sciences.

Short-Term Training for Minority Students Program, 1990

The goal of this program is to introduce minority undergraduate, graduate, and health professional students to research experiences not available through their regular course of study. Five-year awards are made to research institutions to enable them to attract underrepresented minority students enrolled at their institution or other institutions into biomedical and behavioral research careers. Trainees are selected by the funded institution for 2 to 3 months of summer research experience.

Prevention, Education, and Control

Prevention, Education, and Control

Through its Office of Prevention, Education, and Control (OPEC), the NHLBI coordinates translation and dissemination of research findings and scientific consensus to health professionals, patients, and the public so that information may be integrated into health care practice and individual health behavior. To accomplish its mission, the OPEC develops and implements health education programs and initiatives that address high blood pressure, high blood cholesterol, asthma, early warning signs of heart attack, and obesity. The programs use two strategies: one focuses on individuals at high risk, the other on the general public.

Described below are NHLBI prevention, education, and control efforts that focus on minority populations.

National High Blood Pressure Education Program (NHBPEP), 1972

The NHBPEP was initiated to reduce death and disability related to high blood pressure. Currently, it is celebrating 25 years of efforts to promote detection, treatment, and control of high blood pressure in the United States. A major goal of the NHBPEP is to increase awareness, treatment, prevention, and control of high blood pressure and stroke in minority populations.

The *Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure*, released in November 1997, focuses in part on management of hypertension in

minority populations, particularly blacks. The guidelines emphasize the need for health care providers, community coalitions, and religious organizations to collaborate to prevent and control high blood pressure. This strategy for improvement of high blood pressure awareness in communities stems from the highly successful "Stroke Belt" initiative that used the community approach to reach blacks at risk in the South, where stroke rates are higher than elsewhere in the United States. Additional minority outreach efforts involve the dissemination of findings from the NHLBI's "Stroke Belt" project and *Working with Religious Congregations: A Guide for Health Professionals*, published to help State health departments establish more effective programs to reduce CVD risk within black communities.

Several NHBPEP-developed products, including public service announcements directed toward Hispanic communities, a "high blood pressure rap" radio spot, and billboard advertisements, are available for distribution. The "Healthbeat" radio network, launched in 1993, provides radio stations across the country with 60-second "inserts" on diseases affecting blacks, including high blood pressure and stroke. The NHLBI also offers a toll-free number that individuals can call to request information on hypertension in English or Spanish.

National Cholesterol Education Program (NCEP), 1985

The NCEP was initiated to educate health professionals and the public about high blood cholesterol as a risk factor for CHD and about the benefits of lowering cholesterol levels to reduce illness and death from CHD. As shown by results from the 1995 Cholesterol Awareness Survey of physicians and the public, the NCEP has made significant progress toward reducing the prevalence of elevated blood cholesterol. From 1983 to 1995, the percentage of the public who had their cholesterol checked rose from 35 to 75 percent. Moreover, in 1995, physicians reported initiating diet and drug treatment at much lower cholesterol levels than in 1983, consistent with NCEP recommendations. Major elements of the NCEP guidelines for detection and treatment have become established practice.

The NCEP prepares reports for health professionals on current issues regarding detection and treatment of high blood cholesterol. Recommendations from the reports have led to the development of a two-step cholesterol-lowering diet with menu variations for Mexican-American and Southern cuisines. An Institute-produced cookbook features favorite African-American dishes prepared in ways that offer protection from heart disease and stroke. Similarly, a bilingual cookbook targeted to Hispanics contains recipes with reduced fat, cholesterol, and sodium.

National Asthma Education and Prevention Program (NAEPP), 1989

The NAEPP was established to raise awareness of asthma as a serious chronic disease; ensure effective partnerships between patients, physicians, and families; and promote proper diagnosis and effective treatment. The program's coalition of Federal agencies and voluntary health, community, and professional organizations promotes use of new treatment guidelines and educational approaches to prevent, manage, and control asthma.

In 1997, the NAEPP published the *Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma*, which updated the 1991 edition. It presents evidence-based recommendations for diagnosis and management that will help clinicians and patients make appropriate decisions about asthma care. Asthma mortality among black and Hispanic populations is higher than among the general public. The NAEPP has employed a multifaceted approach to reach black and Hispanic communities that includes a mass media campaign, emergency department guidelines for use in inner cities, and educational materials based on research conducted in minority populations. A media campaign to reduce prevalence of undiagnosed asthma among blacks and Hispanics encourages people with asthma symptoms to see a doctor. The NAEPP also has developed a document entitled *Management of Asthma in Minority Children: Practical Insights for Clinicians, Researchers, and Public Health Providers*, which describes lessons learned from research on controlling asthma in black and Hispanic children.

National Heart Attack Alert Program (NHAAP), 1991

The NHAAP was initiated to reduce morbidity and mortality from acute myocardial infarction (MI) and sudden cardiac arrest through education of health care professionals, patients, and the public about the importance of rapid identification and treatment of individuals with heart attack symptoms. The program develops educational materials on symptom recognition and appropriate reactions and collaborates with health care organizations and State and Federal agencies.

During its first 5 years, the NHAAP produced several papers covering important issues related to patient/bystander recognition, prehospital treatment and responses, and emergency department management of patients who have heart attack symptoms. In July 1994, the NHLBI funded a research program, "Rapid Early Action for Coronary Treatment," to study the effects of educational efforts on care sought for symptoms of an acute heart attack. Results of this study are being analyzed and will assist the NHAAP in developing effective messages and supporting materials for its public education campaigns.

In 1997, the NHAAP published recommendations on reducing prehospital delay in patients at high risk for acute MI, an evaluation of technologies for diagnosing patients with acute cardiac ischemia in the emergency department, and community planning considerations for ensuring access to timely care for patients with acute coronary syndromes.

Obesity Education Initiative (OEI), 1991

The OEI was initiated to inform the public and health care professionals of the health risks associated with overweight and obesity. Obesity, a major risk factor for CVD, affects millions of Americans but is particularly prevalent among certain groups, including women, blacks, Hispanics, and American Indians.

As part of its strategy to focus on persons at high risk of CVD, the OEI convened an expert panel to consider scientific evidence related to identification, evaluation, and treatment of obesity in adults, especially among minority populations with multiple CVD risk factors. The panel also focused on the development of evidence-based clinical practice guidelines for use by primary health care providers. Its report on prevention and treatment of obesity is expected to be released in 1998.

NHLBI Ad Hoc Committee on Minority Populations, 1975

The NHLBI Ad Hoc Committee on Minority Populations is a multidisciplinary group of health professionals representing blacks, Hispanics, American Indians, Asians, and Pacific Islanders. Although originally established to assist the NHBPEP in its minority outreach efforts, the role of the Ad Hoc Committee expanded as the Institute intensified its risk reduction efforts and added new national education programs. Today, the committee provides guidance to the NHLBI regarding all efforts designed to improve the health status of minority populations. It recently assisted the OPEC in developing a strategic plan to diminish the burden of CVD among minority populations. The NHLBI will use the committee's recommendations to focus its efforts to promote cardiovascular health among minority populations.

Crosscutting Outreach Activities

The NHLBI works in association with Historically Black Colleges and Universities (HBCUs), particularly those that have medical schools, and with professional organizations such as the Association of Black Cardiologists, the National Medical Association, the Student National Medical Association, and the National Black Nurses' Association to facilitate projects that encourage healthy lifestyles and reduce or prevent CVD risk factors. Professional education forums held at Howard University Hospital, Meharry Medical College, and Harlem Hospital have emphasized CVD risk factor reduction and ways to improve cardiovascular and cardiopulmonary health in black communities.

"CHD in Blacks Project—Breaking the Silence on Heart Disease and Stroke" is an outreach program sponsored by the NHLBI and the NIH Office of Research on Minority Health. The National

Physicians' Network, a component of the project, encourages doctors who provide health care to blacks to become more actively involved in prevention and education activities in black communities, including professional education, community education, and targeted media training.

The NHLBI's local Latino CVD Prevention and Outreach Initiative, "*Salud para su Corazón*" (Health for Your Heart), is a comprehensive, culturally sensitive, community-based health promotion project designed to raise awareness of CVD prevention and encourage heart-healthy lifestyles among Latinos in the Washington, D.C., metropolitan area. Preliminary results from the initiative support use of this model for similar health campaigns in Latino communities across the Nation.

Another crosscutting program, entitled "Building Healthy Hearts for American Indians," is a pilot project to increase knowledge and promote heart health among this population. Health promotion activities and materials developed as part of the project will address cardiovascular health needs of American Indians by incorporating their cultural values, traditions, and lifestyles.

Appendixes

Appendix I

Table 1: Summary of NHLBI Minority Support by Program, FY 1997

	Program Dollars Prorated for Minority Relevance
Heart and Vascular Diseases	
Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT)	8,768,650
Atherosclerosis in Minority Populations Studies	1,798,671
Atherosclerosis Risk in Communities (ARIC)	3,518,819
Biobehavioral Factors—Etiology of Hypertension in Blacks	2,348,564
Bogalusa Heart Study	350,721
Bypass Angioplasty Revascularization Investigation (BARI)	274,421
Cardiovascular Health Study (CHS)	33,596
Cardiovascular Risk Factor Studies and Prevention in Children	2,352,788
Child and Adolescent Trial for Cardiovascular Health (CATCH)	1,128,008
Collaborative Projects on Minority Health	965,942
Coronary Artery Risk Development in Young Adults (CARDIA)	898,052
Diabetes and Cardiovascular Diseases Among Hispanics	538,962
Dietary Intervention Study in Children (DISC)	53,042
Epidemiological and Clinical Minority Studies	1,295,881
Genetic Determinants of High Blood Pressure (Hypergen)	5,601,273
Genetic Determinants of High Blood Pressure	1,686,412
Genetics, Response to Exercise, and Risk Factors	387,024
Honolulu Heart Program (HHP)	252,000
Insulin Resistance Atherosclerosis Study (IRAS)	742,028
Mechanisms of Damage Caused by Cardiopulmonary Bypass	55,121
NHLBI Growth and Health Study (NGHS)	1,782,336
Pathobiological Determinants of Atherosclerosis in Youth (PDAY)	69,165
Pathways: Primary Prevention of Obesity in American Indians	4,091,863
Specialized Centers of Research in Ischemic Heart Disease in Blacks	2,541,305
Strong Heart Study: Cardiovascular Disease in American Indians	3,075,404
Other Heart and Vascular-Related Research	8,891,990
Total for Heart and Vascular Diseases	**$53,502,038**

Lung Diseases

Alveolar Macrophages and Defense of the Lung in AIDS	1,008,602
Childhood Asthma Management Program (CAMP)	1,879,351
Collaborative Projects on Minority Health	1,019,368
Effect of Smoking on Lung Diseases Studies	513,615
Host Factors Controlling Individual Susceptibility to HIV-Associated Pulmonary Disease	1,134,328
Pediatric Pulmonary and Cardiac Complications of HIV Infection (P2C2)	567,588
Regulation of Human Immunodeficiency Virus Activation in the Lung	765,170
Sarcoidosis Etiology: A Case-Control Study (ACCESS)	461,237
Sarcoidosis Program	22,610
Other Lung-Related Research	4,949,359
Total for Lung Diseases	**$12,321,228**

Blood Diseases and Resources

Coagulation, Platelets, and Thrombosis in Sickle Cell Disease Pathophysiology	1,217,912
Collaborative Projects on Minority Health	944,867
Comprehensive Sickle Cell Centers	20,922,613
Cooperative Study of Sickle Cell Disease (CSSCD): Continuation of the Newborn and Pediatric Cohort	205,085
Gene Therapy for Sickle Cell Disease	5,192,977
Multicenter Study of Hydroxyurea in Sickle Cell Anemia (MSH)	472,115
Sickle Cell Disease Therapy	2,181,684
Sickle Cell Disease—Other Research	7,197,015
Stroke Prevention in Sickle Cell Anemia (STOP)	2,583,432
Viral Activation Transfusion Study (VATS)	948,252
Viral Nucleic Acid Testing for HIV and Hepatitis C (HCV) in Donated Organs and Blood	1,682,551
Other Blood-Related Research	3,553,516
Total for Blood Diseases and Resources	**$47,102,019**
Subtotal for NHLBI Minority Extramural Research Programs	**$113,050,285**

Building Research Capacity in the Minority Community

Conference Support for Minority Trainees	63,800
HBCU Research Scientist Award	125,000
Mentored Research Scientist Development Award for Minority Faculty	3,747,865
Minority Biomedical Research Support (MBRS) Program	2,722,065
Minority Institution Faculty Mentored Research Scientist Development Award	834,191
Minority Institutional Research Training (MIRT) Program	898,281
Minority Predoctoral Fellowship Program	369,967
NHLBI MARC Summer Research Training Program	5,847

Research Supplements for Underrepresented Minorities Program	6,958,043
Short-Term Training for Minority Students Program	1,611,969
Total for Building Research Capacity in the Minority Community	**$17,337,028**
Prevention, Education, and Control	
Crosscutting Activities	37,687
National Asthma Education and Prevention Program (NAEPP)	525,000
National Center on Sleep Disorders Research (NCSDR)	163,000
National Cholesterol Education Program (NCEP)	423,000
National Heart Attack Alert Program (NHAAP)	315,000
National High Blood Pressure Education Program (NHBPEP)	419,000
Obesity Education Initiative (OEI)	131,000
Other OPEC Programs	334,000
Total for Prevention, Education, and Control Activities	**$2,347,687**
Grand Total, All NHLBI Minority-Related Program Support, FY 1997	**$132,610,000**

Appendix II

Publications of Interest

The NHLBI Information Center provides information to health professionals, patients, and the public about treatment, diagnosis, and prevention of cardiovascular, lung, and blood diseases, sleep disorders, and transfusion medicine. To obtain printed copies of publications, videotapes, or posters with Catalogue or NIH Publication Numbers, please contact the Center for price and availability.

NHLBI Information Center
P.O. Box 30105
Bethesda, MD 20824-1222
Telephone: (301) 251-1222
Fax: (301) 251-1223

Publications with an NTIS Accession Number can be obtained from the National Technical Information Service by calling, writing, or accessing its World Wide Web address:

NTIS
5825 Port Royal Road
Springfield, VA 22161
(703) 605-6000
http://www.ntis.gov

In addition, many publications may be accessed through the World Wide Web. They can be downloaded from the Web site address provided following the title.

Cardiovascular Topics

Professional

***Cholesterol Lowering in the Management of Coronary Heart Disease* (videotape), 1995. Catalogue No. 55-657. 38 minutes.**

This professional education video, designed for cardiologists and others who treat CVD patients, presents a review of research findings that demonstrate benefits of reducing lipids in CHD patients. It provides an overview of current targets and clinical strategies for cholesterol lowering.

***Cholesterol Lowering in the Patient With Coronary Heart Disease: Physician Monograph,* 1997. NIH Publication No. 97-3794. 36 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/chol/prof/chol_low.htm**

This monograph reviews scientific evidence that cholesterol lowering in CHD patients produces dramatic benefits. It summarizes the clinical practice guidelines contained in the *Second Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults* as they apply to CHD patients and provides guidance on improving patient compliance with dietary and drug treatments.

***Churches as an Avenue to High Blood Pressure Control,* 1992. NTIS Accession No. PB95-217253. $21.50—paper; $14—microfiche. 96 pages.**

This guide provides information to health care professionals and leaders of various religious institutions on how to establish high blood pressure control programs in their communities. It discusses ways to develop such programs and presents issues of concern and resources to contact for additional information and support.

***Data Fact Sheet: Congestive Heart Failure in the United States: A New Epidemic,* 1996. Catalogue No. 55-808. 6 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/chf_abs.htm**

This fact sheet presents information on congestive heart failure and discusses ongoing

research related to understanding its causes and improving its prevention, diagnosis, and treatment.

***From Heart to Heart: A Bilingual Group Discussion Guide (includes two videotapes in Spanish),* 1997. NIH Publication No. 97-4050. 88 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/latino/lat_disc.htm**

This guide, which targets the Latino community, explains how to organize and conduct educational sessions (*charlas*) on heart health. It includes promotional materials, handouts, and ideas for activities such as blood cholesterol and blood pressure screenings, nutrition counseling, and heart-healthy food demonstrations. The videotapes "For the Love of Your Heart" and "Cooking With Your Heart in Mind" focus on prevention of risk factors for heart disease and preparation of heart-healthy Latino dishes, respectively.

***Implementing Recommendations for Dietary Salt Reduction,* 1996. 28 pages. Available on the World Wide Web only. http://www.nhlbi.nih.gov/nhlbi/cardio/hbp/prof/hbp_salt.htm**

This report summarizes a 1994 NHLBI workshop on intervention strategies, monitoring methods, and research directions for dietary salt reduction.

***NHLBI Report of the Workshop on Coronary Heart Disease in Blacks,* 1994. NTIS Accession No. PB95-129037. $22.50—paper; $14.00—microfiche. 108 pages.**

This report summarizes the 1992 review of the state of knowledge concerning CHD in blacks. It includes research recommendations for NHLBI support.

***NHLBI Stroke Belt Initiative,* 1997. 25 pages. Available on the World Wide Web only. http://www.nhlbi.nih.gov/nhlbi/cardio/other/prof/sb_spec.htm**

In 1980 the NHLBI designated 10 southern states and Indiana the "Stroke Belt" because all had stroke death rates more than 10 percent higher than the U.S. average. This document describes the accomplishments of NHLBI-supported Stroke Belt projects in each of these states.

***Report of the Expert Panel on Population Strategies for Blood Cholesterol Reduction,* 1993. NIH Publication No. 93-3046. 139 pages.**

This report from the NCEP presents recommendations for lowering blood cholesterol levels through changes in eating habits.

***The Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI),* 1997. NIH Publication No. 98-4080. 70 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/hbp/prof/jncintro.htm**

This publication is an update of the previous guideline (JNC V, 1992), and contains information for clinicians on new pharmacologic therapies such as combination drugs, the role of managed care in treatment of high blood pressure, and information from recently completed clinical trials on hypertension prevention and treatment.

***The Sports Guide: NHLBI Planning Guide for Cardiovascular Disease Risk Reduction Projects at Sporting Events,* 1995. NIH Publication No. 95-3802. 64 pages.**

Sporting events can be useful venues for promoting innovative programs on CVD risk factor reduction. This guide offers suggestions and ideas for planning promotional activities, securing funds, and evaluating events. Sample forms, reproducible materials, and clip art are provided.

***The Sports Guide: NHLBI Planning Guide (videotape),* 1995. Catalogue No. 55-3802. 8 minutes.**

This videotape, designed as a companion to *The Sports Guide: NHLBI Planning Guide for Cardiovascular Disease Risk Reduction Projects at Sporting Events*, gives program planners a chance to "visit" two successful projects.

***Update on the Task Force Report (1987) on High Blood Pressure in Children and Adolescents: A Working Group Report From the National High Blood Pressure Education Program,* 1996. NIH Publication No. 96-3790. 24 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/hbp/prof/hbp_ped.htm

This publication is designed to assist pediatricians in identifying, preventing, and treating high blood pressure in children. It includes revised blood pressure tables, diagnostic charts, and tables on antihypertensive drug therapy, and presents the public health perspective on promoting healthy lifestyles in children and adolescents.

***Working Group Report on High Blood Pressure in Pregnancy,* 1991. NTIS Accession No. PB95-217311. $19.50—paper; $10—microfiche. 48 pages.**

This report provides guidance to practicing physicians in managing patients with hypertension who become pregnant and pregnant patients who become hypertensive.

***Working Group Report on Hypertension in Diabetes,* 1995. NIH Publication No. 95-3530. 26 pages.**
gopher://fido.nhlbi.nih.gov:70/11/nhlbi/health/cardio/hbp/prof/hbpdiab

This publication highlights epidemiological, diagnostic, and clinical considerations for hypertension in diabetic patients, provides guidance to physicians, and discusses implications for community control programs.

***Working Group Report on Primary Prevention of Hypertension,* 1993. NIH Publication No. 93-2669. 49 pages.**
gopher://fido.nhlbi.nih.gov:70/11/nhlbi/health/cardio/hbp/prof/pphbp

This report examines causes of high blood pressure and approaches for preventing it. The influence of factors such as sodium intake, overweight, alcohol consumption, physical activity level, and stress on the development of hypertension are discussed.

***Working Group Report on the Heart in Hypertension,* 1991. NTIS Accession No. PB95-217295. $19.50—paper; $10—microfiche. 41 pages.**

This report reviews complications resulting from adaptation of the heart to pressure overload in hypertension. It discusses fundamental biological and physiological changes that occur in the hypertensive heart and makes recommendations for diagnosing and treating heart problems related to hypertension.

***Working With Religious Congregations: A Guide for Health Professionals,* 1997. NIH Publication No. 97-4058. 32 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/prof/church.htm

Churches and other houses of worship can play an important role in promoting better cardiovascular health by reaching people who may not receive accurate information about CVD at other sites or by other methods. This guide teaches health professionals and community organizations how to work with clergy and lay leaders to develop, initiate, and maintain health activities for their congregations.

General/Patient

***Check Your Cholesterol and Heart Disease I.Q.,* 1996. NIH Publication No. 96-3794. 2 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/chol/gp/chol_iqa.htm

This true-false quiz tests the reader's knowledge of high blood cholesterol.

***Check Your Healthy Heart I.Q.,* revised 1992. NIH Publication No. 93-2724. 2 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/hh_iq_ab.htm
Spanish version, *Aprenda a Reconocer un Corazón Sano,* 1987. NIH Publication No. 87-2923. 2 pages.

This true-false quiz tests the reader's knowledge of heart disease and its risk factors.

***Check Your High Blood Pressure Prevention I.Q.,* 1994. NIH Publication No. 94-3671. 2 pages.**

This true-false quiz tests the reader's knowledge of high blood pressure and its prevention.

***Check Your Physical Activity and Heart Disease I.Q.,* 1995. NIH Publication No. 95-3795. 2 pages. gopher://fido.nhlbi.nih.gov:70/00/nhlbi/health/cardio/obes/gp/physiciq.txt**

This true-false quiz tests the reader's knowledge of how physical activity affects the heart.

***Check Your Weight and Heart Disease I.Q.,* 1993. NIH Publication No. 93-3034. 2 pages.**

This true-false quiz tests the reader's knowledge of overweight and heart disease.

***Controlling High Blood Pressure: A Woman's Guide,* 1997. Catalogue No. 55-820. 17 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/hbp/gp/hbp_wmn.htm**

This guide explains how high blood pressure affects a woman's health and tells how it can be prevented or controlled with lifestyle changes or medication, if needed. Information on commonly used medications is provided along with a table that lists their generic names.

***Delicious Heart-Healthy Latino Recipes,* 1996. NIH Publication No. 96-4049. 56 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/sp_recip.htm**

This bilingual cookbook contains 23 recipes that cut down on fat, cholesterol, and sodium.

***Eat Right to Help Lower Your High Blood Pressure,* 1995. NIH Publication No. 95-3289. 28 pages plus tear-out.**

This pamphlet describes high blood pressure and recommends steps to lower it through weight loss, physical activity, dietary sodium reduction, and moderation of alcohol consumption. It includes cooking, food shopping, and snacking suggestions to reduce dietary fat and sodium consumption.

***Facts About How to Prevent High Blood Pressure,* 1994. NIH Publication No. 94-3281. 12 pages.**

This fact sheet describes what blood pressure is and what happens when an individual's blood pressure is high. It includes important information on high blood pressure prevention.

***Healthy Heart Handbook for Women,* 1997. NIH Publication No. 97-2720. 100 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/hhw/hdbk_wmn.htm**

This handbook is designed to answer women's questions about CVD. It addresses risk factors such as smoking, high blood pressure, high blood cholesterol, diabetes, overweight, stress, use of oral contraceptives, and alcohol consumption. It provides suggestions for controlling these modifiable risk factors and discusses CVD prevention strategies such as hormone replacement therapy for postmenopausal women and daily aspirin use. Recipes and a guide to low-fat and low-cholesterol foods are included.

***Heart-Healthy Home Cooking: African American Style,* 1997. NIH Publication No. 97-3792. 28 pages. http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/chdblack/cooking.htm**

This pamphlet offers 20 favorite African American dishes that use less saturated fat, cholesterol, and sodium.

***High Blood Pressure Doesn't Have to Kill You to Take Away Your Life,* 1993. Catalogue No. 55-587.**

This poster features snapshots of a black man enjoying various aspects of life, in contrast with a picture of him confined to a wheelchair after having a stroke.

***High Blood Pressure: Treat it for Life,* 1994. NIH Publication No. 94-3312. 52 pages.**

This booklet describes strategies for controlling high blood pressure, including weight loss, increased physical activity, reduced dietary salt and sodium, and limited alcohol consumption.

Medications used for high blood pressure control and the importance of adhering to prescribed treatment are discussed. Special concerns for older persons, blacks, women taking birth control pills, and people with diabetes or high blood cholesterol are addressed. A sample walking program, menu ideas, and recipes are included.

***Improving Cardiovascular Health in African Americans—Package of Seven Easy-To-Read Booklets,* 1997. Catalogue No. 55-832. 8 pages each.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/chdblack/blacks.htm

These booklets are designed to help individuals reduce their chances of having a heart attack or stroke by providing specific information on improving heart health and identifying steps to promote healthy lifestyles. The set includes the following titles: *Energize Yourself—Stay Physically Active; Spice Up Your Life—Eat Less Salt and Sodium; Embrace Good Health—Lose Weight If You Are Overweight; Protect Your Heart—Prevent High Blood Pressure; Empower Yourself—Learn Your Cholesterol Number; Be Heart Smart—Eat Foods Lower in Saturated Fat and Cholesterol; Refresh Yourself—Stop Smoking.*

***Latino Bilingual Booklets—Package of Eight Easy-To-Read Booklets,* 1996. Catalogue No. 55-745. 8 pages each.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/sp-page.htm

These bilingual booklets explain steps people can take to reduce their risk of having a heart attack or stroke. The set includes the following titles: *Take Steps—Prevent High Blood Pressure; Cut Down on Salt and Sodium; Learn Your Cholesterol Number; Protect Your Heart—Lower Your Blood Cholesterol; Watch Your Weight; Cut Down on Fat—Not Taste; Stay Active and Feel Better; Kick the Smoking Habit.*

***Losing You Will Change Her Whole Life, Which Should Convince You to Change Yours,* 1994. Catalogue No. 55-667.**

This poster of a young black girl being held by her father urges people to prevent high blood pressure for their children's sake. It identifies the NHBPEP as an information resource.

***Photonovella: An Ounce of Prevention,* 1998. 21 pages. In English or Spanish. Available on the World Wide Web only.**
http://www.nhlbi.nih.gov/nhlbi/cardio/latinó/lat_foto.htm

This bilingual guide is a simple, colorful photonovella with five brief stories on how to prevent heart disease. It includes a workbook segment for readers to record their own progress.

***So You Have High Blood Cholesterol,* 1993. NIH Publication No. 93-2922. 34 pages.**
gopher://fido.nhlbi.nih.gov:70/11/nhlbi/health/cardio/chol/gp/syh

This booklet describes the relationship of blood cholesterol to CHD. It offers advice on using diet, physical activity, and weight loss to lower blood cholesterol and reduce heart disease risk. A description of specific medications to lower cholesterol level is also given.

***Step by Step: Eating to Lower Your High Blood Cholesterol,* 1994. NIH Publication No. 94- 2920. 100 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/chol/gp/stepb.htm

This booklet provides information and advice on using dietary measures to reduce high blood cholesterol including general rules for lowering blood cholesterol through certain diets, physical activity, and weight loss. It contains tables of saturated fat and cholesterol content in selected foods, serving sizes for meat and cheese, information on different types of physical activity, and a dietary assessment tool to help patients keep track of their eating patterns.

***Women and Heart Disease Fact Sheets,* 1997.**

These fact sheets address how to reduce CVD risk.

***Facts About Heart Disease and Women: Are You at Risk?* NIH Publication No. 97- 3654. 8 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/hdw_risk.htm

Facts About Heart Disease and Women: Be Physically Active. **NIH Publication No. 97-3656. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/hdw_act.htm

Facts About Heart Disease and Women: Kicking the Smoking Habit. **NIH Publication No. 97-3657. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/hdw_smk.htm

Facts About Heart Disease and Women: Preventing and Controlling High Blood Pressure. **NIH Publication No. 97-3655. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/hbp/gp/hdw_hbp.htm

Facts About Heart Disease and Women: Reducing High Blood Cholesterol. **NIH Publication No. 97-3658. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/chol/gp/hdw_hbc.htm

Facts About Heart Disease and Women: So You Have Heart Disease. **NIH Publication No. 97-2645. 8 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/hdw_syh.htm

Facts About Hormone Replacement Therapy and Heart Disease: The PEPI Trial. **NIH Publication No. 97-3277. 8 pages.**
http://www.nhlbi.nih.gov/nhlbi/cardio/other/gp/hrt_pepi.htm

Lung-Related Topics

Professional

Asthma Management in Minority Children: Practical Insights for Clinicians, Researchers, and Public Health Planners, 1995. **NIH Publication No. 95-3675. 60 pages.**

This document describes five projects conducted in several cities throughout the United States under the program entitled "Interventions for the Control of Asthma Among Black and Hispanic Children." It contains practical tips and lessons learned from these projects.

Asthma Management Kit for Emergency Departments, **1994. NTIS Accession No. PB97-130173. $21.50--paper, $10.00--microfiche. 34 pages.**

This kit provides information for urban and rural emergency departments serving minority patients.

Emergency Department Management Algorithms. Two treatment algorithms (for adults and children) have been excerpted verbatim from the *Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma.*

Discussion of Asthma Management in the Emergency Department. This discussion of emergency treatment algorithms provides an overview of patient education in the emergency department.

Monograph. The paper discusses issues of emergency care for minority patients with asthma in urban and rural areas.

Patient Education Handout. This brief handout is for patients to take home after meeting with a health professional.

Asthma Memo, Summer **1996. 16 pages.**
http://www.nhlbi.nih.gov/nhlbi/lung/asthma/prof/asth_mem.htm

This publication reports on asthma-related activities supported by the NHLBI and offers information about the latest research findings, effective health promotion strategies, data, NAEPP Coordinating Committee member activities, and publications.

Childhood Asthma Project

Instructional Guide, **1992. NTIS Accession No. PB96-113758. $34. 70 pages.**

This guide includes behavioral and learning objectives, a list of required equipment and supplies, a teaching outline for educating Hispanic children with asthma, and handouts on the following topics: "What is Easy to Do?"; "How to Use Your Peak Flow Meter and Daily

Record Chart"; "Medicine"; and "Asthma Causes." Text is available in English and Spanish.

***Flipcharts*, 1995. NTIS Accession No. PB96-129044. $48. 20 charts.**

Twenty cards on asthma symptoms, peak flow, medications, and causes. Text is available in English and Spanish.

***Videotape*, 1992. English: NTIS Accession No. AVA19820.VNB1. $60; Spanish: NTIS Accession No. AVA19821.VNB1. $60. 32 minutes.**

This videotape contains the following segments: "Recognizing Asthma Symptoms"; "Before It's Too Late"; "Avoiding Trips to the Emergency Room"; "I Can Do It"; "Exercise and Asthma"; "Your Breathing Meter: It Can Make a Difference"; "Asthma Medicines: They Will Help You"; "Breathe Easy: Follow Your Medication Plan"; "The Fight Against Asthma: Causes of Asthma"; and "Cigarette Smoking and Asthma: A Bad Combination."

Community Intervention for Minority Children With Asthma

***The A + Asthma Club: Trainer's Guide*, 1997. NTIS Accession No. PB97-156103. $28. 117 pages.**

This guide includes goals, general teaching tips, and a detailed outline for a six-session (plus several supplemental sessions) program.

***The A + Asthma Club*, 1995. NTIS Accession No. PB96-119037. $34. 49 pages.**

An illustrated workbook for six meetings.

***The A + Asthma Club*, 1995. NTIS Accession No. PB96-119045. $35. 48 pages.**

A book for the family.

***Making a Difference ... Asthma Management in the School*, 1994 (videotape). Catalogue No. 55-643. 13 minutes, 30 seconds.**

This videotape, designed to improve understanding of asthma and its management in school settings, describes the disease, its symptoms, exacerbating factors that trigger an attack, and common therapies. Asthma management education programs for students and school personnel are also featured.

***National Asthma Education and Prevention Program Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma, Clinical Practice Guidelines*, 1997. NIH Publication No. 97-4051. 146 pages. http://www.nhlbi.nih.gov/nhlbi/lung/asthma/prof/asthgdln.htm**

This publication contains updated clinical practice guidelines for diagnosing and managing asthma. It provides information on treating asthma at varying levels of severity and stresses both clinical and self-management strategies. A comprehensive discussion of current medications and their use is included.

***National Asthma Education and Prevention Program Task Force on the Cost Effectiveness, Quality of Care, and Financing of Asthma Care*, 1996. 110 pages. Available on the World Wide Web only. http://www.nhlbi.nih.gov/nhlbi/lung/asthma/prof/ast_cost.htm**

This report reviews economic factors that influence delivery of asthma care and offers recommendations for improving quality of care in the United States. It makes recommendations on financing health care that are likely to lead to improvements in asthma management.

***NAEPP Working Group Report: Considerations for Diagnosing and Managing Asthma in the Elderly*, 1996. NIH Publication No. 96-3662. 52 pages. http://www.nhlbi.nih.gov/nhlbi/lung/asthma/prof/as_elder.htm**

This document was developed as a companion to the NAEPP guidelines to provide more specific information on treatment of asthma in older individuals. It addresses issues such as changes due to normal aging, coexisting diseases that commonly occur in this patient population, and use of multiple medications. Four components of managing asthma in older populations (patient education, assessment of lung function, environmental control, and pharmacologic therapy) are discussed.

***NAEPP Working Group Report on Asthma and Pregnancy: Management of Asthma During Pregnancy,* 1993. NIH Publication No. 96-141593. 74 pages.**
gopher://fido.nhlbi.nih.gov:70/11/nhlbi/health/lung/asthma/prof/apa

This report is designed to enable clinicians to use appropriate therapy for chronic control, as well as for symptomatic relief, of asthma in pregnant women. It discusses topics associated with fetal monitoring, safety of the fetus, and asthma treatment during labor and delivery.

***Nurses: Partners in Asthma Care,* 1995. NIH Publication No. 95-3308. 63 pages.**

This booklet describes how nurses can establish and maintain partnerships to help patients manage their asthma.

***Practical Guide for the Diagnosis and Management of Asthma,* 1997. NIH Publication No. 97-4053. 60 pages.**
http://www.nhlbi.nih.gov/nhlbi/lung/asthma/prof/practgde.htm

This physician's manual contains information on how to implement recommendations found in the NAEPP's 1997 clinical practice guidelines. It outlines specific steps that clinicians and patients should take to ensure effective asthma management. A variety of tools are provided, including medication dosage charts, glossaries of medication brand names, and patient self-assessment forms.

General/Patient

***Asthma and Physical Activity in the School,* 1995. NIH Publication No. 95-3651. 18 pages.**
http://www.nhlbi.nih.gov/nhlbi/lung/asthma/gp/phy_asth.htm

This booklet shows physical education teachers, coaches, and classroom teachers how to help their students with asthma participate fully and safely in sports and physical activities. It emphasizes the importance of following individual asthma management plans, ensuring that students with asthma have convenient access to their medications, modifying physical activities when needed to match current asthma status, and recognizing symptoms and taking appropriate actions.

***Check Your Asthma I.Q. NIH Publication No. 92-1128, reprinted* 1992. 2 pages.**
gopher://fido.nhlbi.nih.gov:70/00/nhlbi/health/lung/asthma/gp/asthmaiq.txt

This true-false quiz tests the reader's knowledge of asthma. Topics covered include asthma triggers, asthma monitoring, medications, and exercise.

***Facts About Controlling Your Asthma. NIH Publication No. 97-2339, revised* 1997. 8 pages.**
http://www.nhlbi.nih.gov/nhlbi/lung/asthma/gp/asth_fs.htm
Spanish version, *El Asthma: Cómo Controlar Esta Enfermedad,* 1997. NIH Publication No. 97-0734. 8 pages.
http://www.nhlbi.nih.gov/nhlbi/lung/asthma/gp/asths_fs.htm

This practical, easy-to-read patient education brochure contains basic asthma information for both newly diagnosed and long-term asthma patients. It includes five reproducible handouts.

***Managing Asthma: A Guide for Schools,* 1991. NIH Publication No. 91-2650. 17 pages.**

This guide gives school personnel information necessary to begin an asthma management program. Basic guidelines are presented as action steps for specific school staff members, including principals, teachers, coaches, guidance counselors, and school nurses. It includes information sheets on use of peak flow meters and metered-dose inhalers, an asthma action plan, an information sheet on early signs of an asthma attack, and sources of additional information.

***Your Asthma Can Be Controlled: Expect Nothing Less,* 1993. NIH Publication No. 93-2665. 20 pages.**
http://www.nhlbi.nih.gov/nhlbi/lung/asthma/gp/asthma.htm

This pamphlet teaches patients how to become active partners with their doctors in their asthma care. It presents important issues that patients need to address with their physicians for optimal

asthma management. Specific approaches and expected results are described so that patients can assess the effectiveness of their treatment.

***Sarcoidosis,* 1995. NIH Publication No. 95-3093. 24 pages.**
gopher://fido.nhlbi.nih.gov:70/00/nhlbi/health/lung/other/gp/sarcoid.txt

This booklet discusses the diagnosis and treatment of sarcoidosis, the most common fibrotic lung disorder. Although written primarily for patients, it also contains a special research section for health care professionals that addresses technical aspects of recent advances in sarcoidosis care.

Blood Diseases and Resources Topics

Professional

***Management and Therapy of Sickle Cell Disease,* revised 1996. NIH Publication No. 96- 2117. 114 pages.**
http://www.nhlbi.nih.gov/nhlbi/blood/sickle/prof/sick-m&t.htm

This clinical guide represents a collective summary of experiences with therapeutic regimens and highlights the enormous progress made in the management of clinical problems associated with SCD over the past 5 years.

General/Patient

***Facts About Sickle Cell Anemia,* 1996. NIH Publication No. 96-4057. 6 pages.**
http://www.nhlbi.nih.gov/nhlbi/blood/sickle/gp/sca_fact.htm

This fact sheet provides information on the causes, signs and symptoms, diagnosis, and treatment of sickle cell anemia.

***Patient Fact Sheet: The Multicenter Study of Hydroxyurea in Sickle Cell Anemia (MSH),* 1995. 3 pages. Available only on the World Wide Web.**
http://www.nhlbi.nih.gov/nhlbi/blood/sickle/gp/mshnews.htm

This fact sheet provides information on the NHLBI-supported MSH. It discusses hydroxyurea therapy for patients with sickle cell anemia.

Sleep Disorders

Professional

***Strategy Development Workshop on Sleep Education—Summary Report,* 1995. NIH Publication No. 95-3800. 68 pages.**

This report summarizes presentations made at the 1994 workshop on public education in sleep apnea and other sleep disorders. It addresses target audiences, educational messages, recommended communication channels, and priorities for education activities.

General/Patient

***Breathing Disorders During Sleep,* revised 1994. NIH Publication No. 94-2966. 36 pages.**

This booklet reviews some of the more than 70 sleep-related breathing disorders and their associated health effects, including high blood pressure, irregular heart rhythm, and heart attacks. It describes the diagnosis and treatment of sleep apnea and highlights NHLBI research programs on sleep disorders.

***Facts About Insomnia,* 1995. NIH Publication No. 95-3801. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/sleep/gp/insomnia.htm

This fact sheet presents information on insomnia and discusses its causes and treatment.

***Facts About Narcolepsy,* 1996. NIH Publication No. 96-3649. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/sleep/gp/narcolep.htm

This fact sheet presents information on narcolepsy and discusses its diagnosis and treatment.

***Facts About Problem Sleepiness.* 1997. NIH Publication No. 97-4071. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/sleep/gp/pslp_fs.htm

This fact sheet presents information on problem sleepiness and discusses its causes and some strategies for relief.

***Facts About Restless Legs Syndrome (RLS),* 1996. NIH Publication No. 96-3645. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/sleep/gp/rls.htm

This fact sheet presents information on restless legs syndrome and discusses its diagnosis and treatment.

***Facts About Sleep Apnea,* 1995. NIH Publication No. 95-3798. 4 pages.**
http://www.nhlbi.nih.gov/nhlbi/sleep/gp/sleepapn.htm

This fact sheet presents information on sleep apnea and discusses its causes and treatment.

***Test Your Sleep I.Q.,* 1996. NIH Publication No. 96-3797. 2 pages.**
http://www.nhlbi.nih.gov/nhlbi/sleep/gp/sleep_iq.htm

This true-false quiz tests the reader's knowledge of sleep.

Training and Career Development

***Expanding Research Opportunities: A Partnership Guide,* 1997. 94 pages.**
http://www.nhlbi.nih.gov/nhlbi/train/part-sub.htm

This guide provides practical advice on setting up and coordinating a variety of collaborative research training activities, from joint seminars to bridge programs. Among the topics discussed are how to locate and negotiate with a partner institution, maximize the training value of joint activities, coordinate and expand a partnership, and link partnership resources strategically to provide greater research opportunities for faculty and students.

***Minority Outreach: Research and Education (MORE)--Making Investments for a Healthy Tomorrow,* 1993. NIH Publication No. 93-3529. 18 pages.**

This brochure describes NHLBI research, education, and training activities for minority researchers. Included are research, training, and career development opportunities for minority students and faculty at minority institutions and information on minority outreach, prevention, and education activities.

***NHLBI MARC Summer Research Training Program,* 1991. 2 foldout pages.**

This brochure provides information on a 10-week Minority Access to Research Careers (MARC) summer research opportunity in NHLBI intramural laboratories available to selected honor students.

***Research Training and Career Development Programs of the National Heart, Lung, and Blood Institute,* revised 1996. NIH Publication No. 96-2999. 81 pages.**
http://www.nhlbi.nih.gov/nhlbi/train/redbook/red-hmpg.htm

This book describes research training and career development programs of the NHLBI. It is a compilation of program summaries intended to encourage individuals at various stages of their careers to seek further information on these opportunities.

Appendix III

Abbreviations

ACCESS	Sarcoidosis Etiology: A Case-Control Study
ALLHAT	Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial
ARIC	Atherosclerosis Risk in Communities
BARI	Bypass Angioplasty Revascularization Investigation
CAMP	Childhood Asthma Management Program
CARDIA	Coronary Artery Risk Development in Young Adults
CATCH	Child and Adolescent Trial for Cardiovascular Health
CHD	Coronary heart disease
CHS	Cardiovascular Health Study
CSSCD	Cooperative Study of Sickle Cell Disease
CVD	Cardiovascular disease
DBDR	Division of Blood Diseases and Resources
DECA	Division of Epidemiology and Clinical Applications
DHVD	Division of Heart and Vascular Diseases
DIR	Division of Intramural Research
DISC	Dietary Intervention Study in Children
DLD	Division of Lung Diseases
ECG	Electrocardiogram
HBCUs	Historically Black Colleges and Universities
HCV	Hepatitis C
HDL	High-density lipoprotein
HHP	Honolulu Heart Program
HIV	Human immunodeficiency virus
IRAS	Insulin Resistance Atherosclerosis Study
JNC	Joint National Committee
LDL	Low-density lipoprotein
LVH	Left-ventricle hypertrophy
MARC	Minority Access to Research Careers
MBRS	Minority Biomedical Research Support
MI	Myocardial infarction
MIRS	Minority Investigator Research Supplements
MIRT	Minority Institutional Research Training
MORE	Minority Outreach: Research and Education
MSH	Multicenter Study of Hydroxyurea in Sickle Cell Anemia
NAEPP	National Asthma Education and Prevention Program
NCEP	National Cholesterol Education Program
NCSDR	National Center on Sleep Disorders Research
NGHS	NHLBI Growth and Health Study
NHAAP	National Heart Attack Alert Program
NHBPEP	National High Blood Pressure Education Program
NHLBI	National Heart, Lung, and Blood Institute
NIH	National Institutes of Health
NTIS	National Technical Information Service
OEI	Obesity Education Initiative
OPEC	Office of Prevention, Education, and Control
P2C2	Pediatric Pulmonary and Cardiovascular Complications of HIV Infection
PDAY	Pathobiological Determinants of Atherosclerosis in Youth
SCD	Sickle cell disease
SCOR	Specialized Centers of Research
STOP	Stroke Prevention in Sickle Cell Anemia
TB	Tuberculosis
VATS	Viral Activation Transfusion Study

Index of Programs

A

ACCESS (Sarcoidosis Etiology: A Case-Controlled Study). 14
ALLHAT (Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial) 7
Alveolar Macrophages and Defense of the Lung in AIDS 13
Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT) 7
ARIC (Atherosclerosis Risk in Communities) 7
Atherosclerosis in Minority Populations Studies 8
Atherosclerosis Risk in Communities (ARIC) 7

B

BARI (Bypass Angioplasty Revascularization Investigation) 8
Biobehavioral Factors—Etiology of Hypertension in Blacks. 8
Bogalusa Heart Study 8
Bypass Angioplasty Revascularization Investigation (BARI) 8

C

CAMP (Childhood Asthma Management Program). . 13
CARDIA (Coronary Artery Risk Development in Young Adults). 9
Cardiovascular Health Study (CHS) 8
Cardiovascular Risk Factor Studies and Prevention in Children 9
CATCH (Child and Adolescent Trial for Cardiovascular Health) 9
Child and Adolescent Trial for Cardiovascular Health (CATCH) 9
Childhood Asthma Management Program (CAMP). . 13
CHS (Cardiovascular Health Study) 8
Coagulation, Platelets, and Thrombosis in Sickle Cell Disease Pathophysiology 14
Collaborative Projects on Minority Health 9
Comprehensive Sickle Cell Centers 14
Cooperative Study of Sickle Cell Disease (CSSCD): Continuation of the Newborn and Pediatric Cohort 15
Coronary Artery Risk Development in Young Adults (CARDIA) 9
Crosscutting Outreach Activities 23

D

Diabetes and Cardiovascular Diseases Among Hispanics 10
Dietary Intervention Study in Children (DISC). 10
DISC (Dietary Intervention Study in Children). 10

E

Effect of Smoking on Lung Diseases Studies 13
Epidemiological and Clinical Minorities Studies 10

G

Gene Therapy for Sickle Cell Disease 15
Genetic Determinants of High Blood Pressure 10
Genetics, Response to Exercise, and Risk Factors. . . . 10

H

HBCU Research Scientist Award 16
Honolulu Heart Program 11
Host Factors Controlling Individual Susceptibility to HIV-Associated Pulmonary Disease 13

I

Insulin Resistance Atherosclerosis Study (IRAS). 11
IRAS (Insulin Resistance Atherosclerosis Study). 11

J

Jackson Heart Study 11

M

MBRS (Minority Biomedical Research Support) Program 17
Mechanisms of Damage Caused by Cardiopulmonary Bypass 11
Mentored Research Scientist Development Award for Minority Faculty 16
Minority Biomedical Research Support (MBRS) Program 17
Minority Biomedical Research Training Program. . . . 17

Minority Institutional Faculty Mentored Research Scientist Development Award. 17
Minority Institutional Research Training (MIRT) Program 17
Minority Predoctoral Fellowship Program. 18
MIRT (Minority Institutional Research Training) Program 17
MSH (Multicenter Study of Hydroxyurea in Sickle Cell Anemia). 15
Multicenter Study of Hydroxyurea in Sickle Cell Anemia (MSH) 15

N

NAEPP (National Asthma Education and Prevention Program). 22
National Asthma Education and Prevention Program (NAEPP) 22
National Cholesterol Education Program (NCEP). . . 22
National Heart Attack Alert Program (NHAAP) . . . 23
National High Blood Pressure Education Program (NHBPEP) 21
NCEP (National Cholesterol Education Program). . . 22
NGHS (NHLBI Growth and Health Study 11
NHAAP (National Heart Attack Alert Program) . . . 23
NHBPEP (National High Blood Pressure Education Program) 21
NHLBI Ad Hoc Committee on Minority Populations 23
NHLBI Growth and Health Study (NGHS). 11
NHLBI MARC Summer Research Training Program. 18

O

Obesity Education Initiative (OEI). 23
OEI (Obesity Education Initiative). 23

P

P2C2 (Pediatric Pulmonary and Cardiac Complications of HIV Infection). 13
Pathobiological Determinants of Atherosclerosis in Youth (PDAY). 12
Pathways: Primary Prevention of Obesity in American Indians 12
PDAY (Pathobiological Determinants of Atherosclerosis in Youth). 12
Pediatric Pulmonary and Cardiac Complications of HIV Infection (P2C2) 13

R

Regulation of Human Immunodeficiency Virus Activation in the Lung. 14
Research Supplements for Underrepresented Minorities 18

S

Sarcoidosis Etiology: A Case-Control Study (ACCESS) 14
Sarcoidosis Program 14
Short-Term Training for Minority Students Program . 18
Sickle Cell Disease Therapy 15
Sickle Cell Disease—Other Research 15
Specialized Centers of Research (SCOR) in Ischemic Heart Disease in Blacks 12
Stroke Prevention in Sickle Cell Anemia (STOP). . . . 15
Strong Heart Study: Cardiovascular Disease in American Indians 12
STOP (Stroke Prevention in Sickle Cell Anemia). . . . 15

V

VATS (Viral Activation Transfusion Study) 16
Viral Activation Transfusion Study (VATS) 16
Viral Nucleic Acid Testing for HIV and Hepatitis C (HCV) in Donor Blood 16

Discrimination Prohibited:
Under provisions of applicable public laws enacted by Congress since 1964, no person in the United States shall, on the grounds of race, color, national origin, handicap, or age, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity (or, on the basis of sex, with respect to any education programs or activity) receiving Federal financial assistance. In addition, Executive Order 11141 prohibits discrimination on the basis of age by contractors and subcontractors in the performance of Federal contracts, and Executive Order 11246 states that no federally funded contractor may discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Therefore, the National Heart, Lung, and Blood Institute must be operated in compliance with these laws and Executive Orders.

NIH LIBRARY
3 1496 01062 5013

U.S. DEPARTMENT OF HEALTH AND
HUMAN SERVICES

Public Health Service
National Institutes of Health
National Heart, Lung, and Blood Institute

Minority programs of the National Heart, Lung, and Blood Institute
National Heart, Lung, and Blood Institute
NIH Library
[17] minorityprograms00nati
31496010625013
Sep 10, 2015

NIH LIBRARY
3 1496 01062 5013

U.S. DEPARTMENT OF HEALTH AND
HUMAN SERVICES

Public Health Service
National Institutes of Health
National Heart, Lung, and Blood Institute